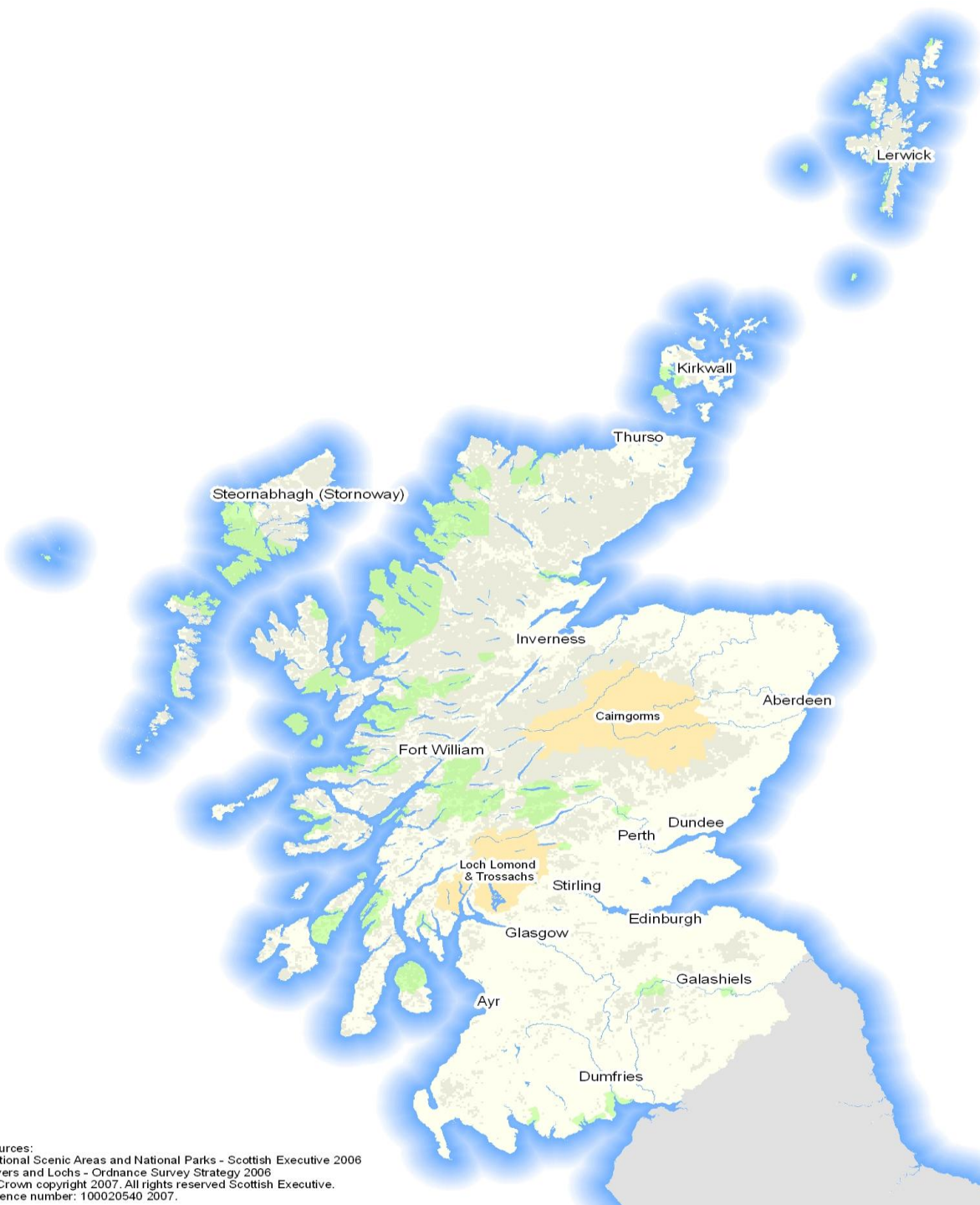


# OECD Review of the Quality and Equity of Education Outcomes in Scotland

## Diagnostic Report



## OECD Review of the Quality and Equity of Education Outcomes in Scotland Diagnostic Report

In 2006, Scotland asked the OECD to examine the performance of its school system within the framework of the OECD's reviews of national policies for education. Scottish authorities were particularly interested in receiving advice about the adequacy of recent reforms in view of the experience of several countries facing similar challenges.

After agreement on Terms of Reference, a team of independent examiners visited Scotland in early 2007. The examiners' report, *Reviews of National Policies for Education: Quality and Equity of Schooling in Scotland* (ISBN 9789264040991), was published by the OECD in December 2007.

This Diagnostic Report was prepared by the Scottish Government to provide the examiners with an overview of the Scottish education system. The report was compiled in early 2007 to provide the review team with a broad evidence base and introduction to the Scottish education system at that time.

References to this report should identify the source as Scottish Executive Education Department (2007), OECD Review of the Quality and Equity of Education Outcomes in Scotland: Diagnostic Report.

The report is available at <http://dx.doi.org/10.1787/148012367602> and on the OECD website at [www.oecd.org/edu/reviews/nationalpolicies](http://www.oecd.org/edu/reviews/nationalpolicies).

For more information on education in Scotland: [www.scotland.gov.uk/topics/education](http://www.scotland.gov.uk/topics/education).

# OECD Review of the Quality and Equity of Education Outcomes in Scotland

## DIAGNOSTIC REPORT

### Purpose

The purpose of this report is to provide an overview of the Scottish Education system<sup>1</sup> for the OECD Review of the Quality and Equity of Education Outcomes in Scotland taking place during March 07.

This paper is not intended to be a stand-alone document but rather one that covers the main aspects of the Scottish system and helps questions to be developed and issues raised. The paper focuses – as does the OCED review – on the primary and secondary sectors, although the pre-school, Further Education and Higher Education sectors are referenced in a number of places.

With this in mind it is expected that users of this paper may have further questions about the Scottish Education system, in the first instance these can be directed to [Peter.Whitehouse@scotland.gsi.gov.uk](mailto:Peter.Whitehouse@scotland.gsi.gov.uk)

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<sup>1</sup> Unless noted references to Schools and the Education System refer to publicly funded schools

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# Chapter 1: The development and context of the Scottish Education system

## 1.1 Scotland and its Population

1.1.1 Scotland makes up the top third of the mainland area of the United Kingdom. It is bounded to the south by England, to its east by the North Sea and to its west and north by the Atlantic Ocean. Scotland has a large number of islands – mainly off the west coast with the notable exceptions of Orkney and Shetland which lie off the north coast. Mainland Scotland can be seen in three topographical areas. The north and north west is the sparsely populated and mountainous Highlands, the central belt which contains the bulk of the population and the Borders containing a combination of farm land and high peat moors.

1.1.2 Scotland has a population of around 5.1 million people and whilst the vast majority of the land mass of Scotland would be described as rural, over 80 percent of the population live in urban Scotland and over 90 percent live within 30 minutes drive of a population centre of 10,000 people or more<sup>2</sup>. Scotland's population size has been relatively stable over the last 50 years with current projections suggesting a slight increase over the next 15 years followed by a slow fall over the next 25 years to around 4.9 million<sup>3</sup>. Comparisons with other European countries place the projected change in Scotland just below the EU average and comparatively stable. (Chart 1).

1.1.3 Whilst the general picture of population change in Scotland is one of a falling and ageing population – caused by 'natural decrease' (deaths exceed births) and a lack of a compensatory in-migration - projections about the extent and timing of the change have been reviewed by the General Register Office for Scotland (GROS). In 2003 the projection was that by 2009 the population would fall to under 5 million, this is now expected to happen in 2036 – some of this change will be down to in-migration<sup>4</sup>, particularly workers and their families from the A8 countries<sup>5</sup>.

1.1.4 Scotland is split into 32 local authorities who are responsible for delivering a range of services including education. The authorities range from almost entirely urban authorities (Dundee, Glasgow, Edinburgh, and Aberdeen) to almost entirely rural (Western Isles, Moray). Of significant importance to the services required from local authorities – and particularly the education system - over the next 15 years is the projection that whilst the population may slightly increase, it will also significantly age. It is expected that the number of people aged under 16 will fall by 15 percent, the number of people of working age will fall by 7 percent and the number of people of pension age will increase by 35 percent. These significant changes combined with population changes within the country - over the last 10 years the Western Isles and Aberdeen have seen a fall of 8 percent or more, whereas North Lanarkshire has seen no change and East Lothian a 6 percent increase and West Lothian a 10 percent increase -

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<sup>2</sup> Social Focus on Urban and Rural Scotland - 2003 : Scottish Executive

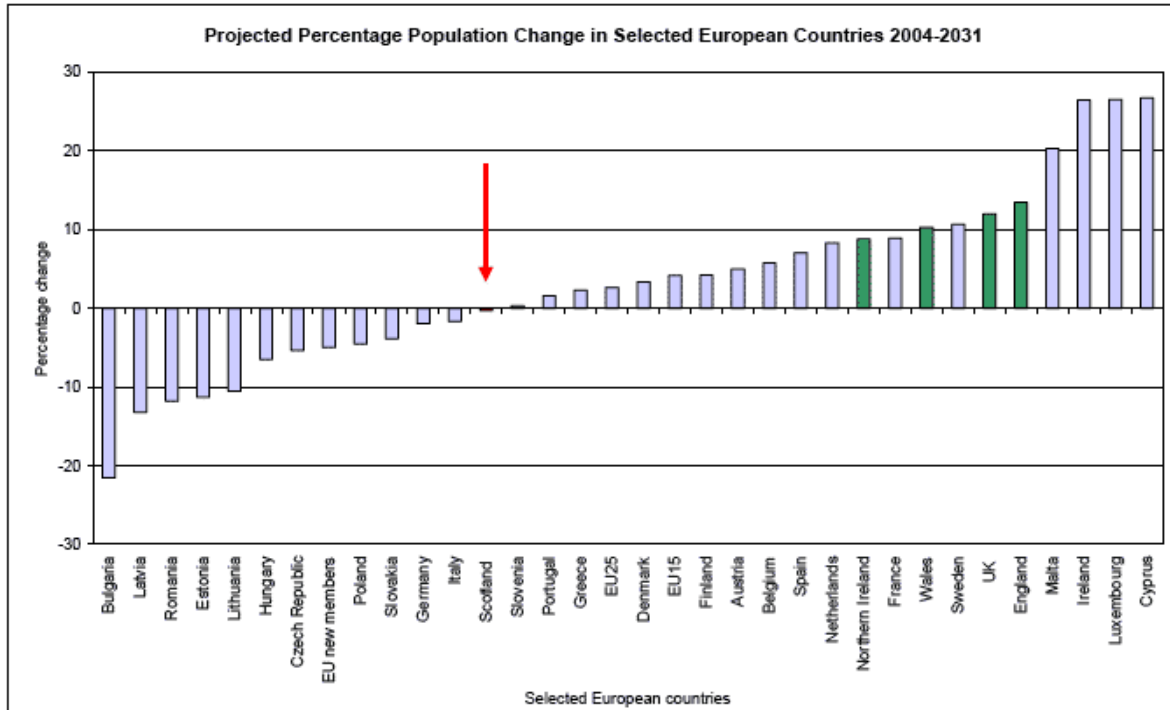
<sup>3</sup> The Registrar General's Annual Review of Demographic Trends - 2005 : GROS

<sup>4</sup> The actual projections do not specifically account for migrants from EU states as distinct from migrants from other parts of the world.

<sup>5</sup> The A8 countries are the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia.

will have a significant impact on the provision of and need for services across Scotland<sup>6</sup>.

**Chart1 : Comparison of Population Change (2004 – 2031)**



Source: Government Actuary's Department and Eurostat

1.1.5 The population of Scotland largely records itself as being within classification ‘White’ (98 percent) ethnicity as defined by the Population Census (2001). Of the 2 percent of the population who record themselves within the category labelled minority ethnic group, just under one third record themselves as of Pakistani ethnicity and around 1 in 6 as Indian or Chinese. Scotland’s minority ethnic population is much more likely to be living in the large urban areas, with just under a third living in Glasgow and just under 1 in 5 living in Edinburgh.

1.1.6 Looking at pupils in local authority schools, latest figures show that just over 96 percent of pupils – who disclose their ethnicity - record themselves as White. Of those pupils who disclose their ethnicity within the minority ethnic classifications around 1/3 record themselves as Asian – Pakistani and about 20 percent as mixed. Within the school sectors, around 30 percent of primary school pupils who classify themselves in the minority ethnic groups attend Glasgow schools with another 15 percent attending Edinburgh schools. At the secondary sector comparable figures are 27 percent in Glasgow and 14 percent in Edinburgh<sup>7</sup>.

## 1.2 Scotland’s Economy - Summary

1.2.1 The most recent data on the Scottish economy continues to paint a positive picture. Growth of gross value added (GVA) in the second quarter of 2006 was 0.6 per cent and

<sup>6</sup> The Registrar General's Annual Review of Demographic Trends - 2005 : GROS

<sup>7</sup> Pupil Census – September 2005 : Scottish Executive

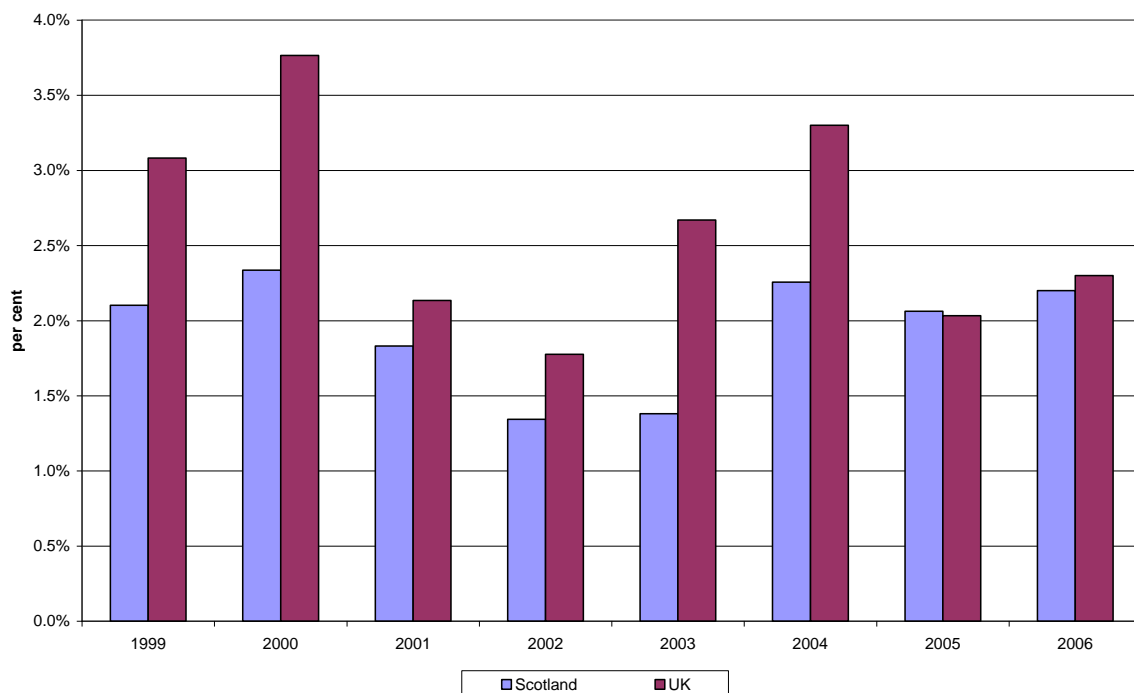
annual growth was above the long-term annual average (1.8 per cent) at 2.2 per cent. The Scottish economy has grown above its long-term annual average for the last eight consecutive quarters.

1.2.2 The Scottish labour market continues to perform strongly. ILO unemployment<sup>8</sup> has fallen to around its lowest ever level (131,000), and the rate (5.0 per cent) is below the UK average (5.6 per cent). Employment continues to increase, with the employment level (2,474,000) and rate (75.2 per cent) around their best ever positions. Moreover, Scotland’s relative employment position continues to be strong, with the employment rate above that of the UK, Euro-zone, EU-25 and many international competitors.

### 1.3 Output

1.3.1 The latest data shows that the Scottish economy is experiencing robust growth<sup>9</sup>. This is the thirteenth successive quarter where the Scottish economy has either expanded or remained stable. However, despite the strong position compared with the previous quarter, Scotland’s growth rate continues to be below that of the UK both on a quarterly and annual basis

**Chart 2: Scottish and UK growth rates**



Source: Scottish Economic Review 2006 – Scottish Executive

1.3.2 Since 2000, the trend in the Scottish economy has been for robust growth in the service sector, with a subdued – and declining performance – in the production sector. The service sector (which accounts for 72.0 per cent of the total economy), continues to be

<sup>8</sup> International Labour Organisation Unemployment rate (16 – 59 / 64 years of age)

<sup>9</sup> output expanding in the second quarter of 2006 at a rate of 0.6 per cent



the main driver of growth. In contrast, the performance of the production sector remains subdued, but recent data have shown that the declines are now levelling off.

## **1.4 Labour market**

1.4.1 The fundamentals of the Scottish labour market remain strong, with the majority of indicators strengthening over the past year (2006).

1.4.2 Despite the small decline in the employment rate over the year, total employment has risen. This is due to increases in the working age population outweighing the increased numbers in employment<sup>10</sup>. Despite the slight decrease over the year in the employment rate, the level and rate both still remain close to their best ever positions (since 1992 when quarterly records began). Moreover, the rate is also above that of the UK.

1.4.3 Scotland's employment performance is strong in an international context. According to Eurostat, over the period April-June 2006<sup>11</sup>, Denmark (76.9 per cent), the Netherlands (74.2 per cent) and Sweden (73.1 per cent) had the highest employment rates in the EU-25. Scotland's current seasonally adjusted<sup>12</sup> employment rate of 75.2 per cent is in excess of the Netherlands and Sweden, and, although not directly comparable, this provides clear evidence that Scotland's labour market is operating well. Scotland's rate was above the OECD average, with a rate above both the United States and Japan.

1.4.4 It should be highlighted that the recent strong performance of the labour market in Scotland – especially in terms of employment – has been achieved during a period of considerable structural change within the Scottish economy. As noted earlier, there has been a prolonged decline in the production sector and, within this, manufacturing. What is clear is that job creation in the service sector has been of a sufficient scale to more than offset the declines in manufacturing. This labour market flexibility and efficiency has reduced the impact of 'structural unemployment' that is normally associated with declining sectors.

1.4.5 As with the recent employment performance, Scotland is also experiencing historically low levels of unemployment. The unemployment rate (according to the ILO<sup>13</sup> definition) over the period July-September 2006 was 5.0 per cent – down 0.4 percentage points over the quarter and year.

1.4.6 Looking at economic activity by qualification level<sup>14</sup>, there continues to be an increasing move towards a higher qualified labour force. At the turn of the millennium just under 16 percent of those in employment had qualification above SVQ level 4<sup>15</sup> compared with just over 11 percent of those in employment having no qualifications. In 2006, the comparable figures were over 21 percent (having above SVQ level 4) and less than 9 percent of those in employment having no qualifications.

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<sup>10</sup> Employment rates are expressed as those persons of working age (16-59/64) in employment as a proportion of the total population of working age (16-59/64) persons.

<sup>11</sup> International comparisons of employment rate statistics are difficult to make since data gathering and statistical methodologies differ significantly across countries.

<sup>12</sup> Seasonal adjustment is a process of estimating regularly occurring seasonal effects and removing them from the raw data.

<sup>13</sup> International Labour Organisation

<sup>14</sup> Source : Labour Force Survey – based on adults aged 16 – 59 / 64

<sup>15</sup> Scottish Vocational Qualifications (see Annex F)

## **1.5 Regional Economic Performance**

- 1.5.1 There are significant differences in the composition of economic activity across Scotland. For example, in Edinburgh the financial services industry plays a key role, accounting for around 32 per cent of employment. Meanwhile, in Aberdeen and the surrounding areas the oil industry has been one of the main drivers behind economic growth since the 1970s.
- 1.5.2 The manufacturing industry has, like in many other developed countries, experienced a period of decline over the past thirty years. Despite this, manufacturing still accounts for around a fifth of the output from the Scottish economy and is the dominant industry in some parts of Scotland. For example, over 60 per cent of economic activity in East Dunbartonshire is accounted for by manufacturing.
- 1.5.3 Regional differences exist in the labour market, both in terms of labour market participation and unemployment. In terms of the latter, although the national unemployment rate (based on the ILO measure) in 2005 was 5.3 per cent, the area with the highest rate of unemployment was Glasgow at 8.0 per cent. The lowest rate of unemployment occurred in Orkney at 3.1 per cent. Similarly, Glasgow had the lowest rate for those economically active at 72.1 per cent compared to the national average of 79.2 per cent in 2005.

## **1.6 Future Economic Prospects**

- 1.6.1 Looking to the future, the majority of business surveys expect this current performance to continue into 2007. Furthermore, the four independent forecasts monitored by the Scottish Executive predict above trend growth in 2007. The forecasts suggest that the service sector will continue to expand strongly in 2007 and, this will also be accompanied by growth in the manufacturing sector. However, this positive GVA growth performance is still expected to be surpassed by the performance of the UK economy as a whole.

## **1.7 Low Income Households and Multiple Deprivation**

- 1.7.1 One area of particular focus for the Scottish Executive, has been low income households. Looking at relative low income (a measure which assesses how those in the lowest income households are keeping pace with the growth of incomes in the economy as a whole), the latest figures show that since 1997/98 there has been a fall of 21 percent in the number of individuals living in relative low income households (from 1.01 million to 0.8 million) – before housing costs.
- 1.7.2 Within this largely positive picture there continue to be areas in Scotland of high unemployment, poor health and other factors associated with and causing deprivation. The Scottish Index of Multiple Deprivation<sup>16</sup> tells us that a number of local authorities have a large proportion of their area assessed as being in the 15 percent most deprived areas in Scotland. These are Glasgow City (48 per cent of the authority), Inverclyde (38 per cent), Dundee City (30 per cent), West Dunbartonshire (28 per cent), Clackmannanshire (23 per cent) and North Lanarkshire (20 per cent). However, Western

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<sup>16</sup> Scottish Index of Multiple Deprivation – 2006 : Scottish Executive

Isles, Moray, Orkney Islands and Shetland Islands do not have any areas in the 15 percent most deprived. This does not mean that there is no deprivation in these areas rather that it is not concentrated in small areas.

## **Chapter 2: Description of Scotland's Education System**

### **2 Description of Scotland's Education System - Overview of Historical Background**

- 2.1.1 Education in Scotland has a long and distinguished history. By the end of the 15th century, for example, Scotland already had three universities (St Andrew's, established in 1411; Glasgow, established in 1451; and Aberdeen, established in 1495) and schools run by the Church existed in the Middle Ages. By the 16th century the burghs (towns) were also founding schools. In 1560 the Protestant reformer, John Knox, called for an elementary school in every parish. Over the 17th century the Scottish Parliament passed several Acts encouraging the establishment of schools. The final Act of the series, in 1696, believed to be the world's first national education act, provided for a school in every parish, a fixed salary for the teacher and financial arrangements to cover the cost.
- 2.1.2 Over the years many schools were established in Scotland, some by the churches and others by the larger towns, by societies and by individuals, with the result that by the mid-19th century a very large proportion of the population in many areas of the country was literate. In 1840, the first inspector of schools for Scotland was appointed.
- 2.1.3 The 1864 Commission to examine the state of education in Scotland led to the most important educational event in the 19th century, the Education (Scotland) Act of 1872. This Act created a Board of Education for Scotland, established the responsibility of parents to see that all children between the ages of 5 and 13 received education and provided for the funding of education from the local property tax. The Act thus took education out of the hands of the churches and made it the responsibility of local elected bodies, the School Boards. It allowed the right to opt out of religious education. The Act also established the principle that all head teachers should hold a certificate of competency to teach and that all teachers should be trained. At first fees were charged for attendance at school but free primary education was introduced in 1890. The age for compulsory education was extended to 14 in 1901.
- 2.1.4 The Scotch (later Scottish) Education Department, which came under the control of the new office of Secretary for Scotland, created in 1885, was at first located in London and did not move to Edinburgh until 1922. Its formation, however, took Scottish education along quite a different path of development from the educational system of England and Wales. The most striking developments in the period up to 1945 were the establishment of a single external examination system for Scotland in 1888; the founding of more than 200 new secondary schools in the period between 1900 and 1914; and the creation of 36 local education authorities in 1918 to replace the unwieldy system of almost 1,000 School Boards. In addition, the schools which were still owned and run by the Roman Catholic Church came into the state education system in 1918, on condition that they were allowed to continue to operate as denominational schools. In the Education (Scotland) Act of 1936 the important decision was taken to define Scottish primary education as covering the seven years from age 5 to age 12 and to separate it clearly from secondary.
- 2.1.5 The period immediately after the Second World War (1945) saw the publication of major reports reviewing primary and secondary education. The eventual

implementation of their recommendations laid the foundation of the present system. A major aim was to provide educational opportunity for all pupils. Many of these developments were not put in place until the 1960s. In primary schools change was brought about through the curriculum. Primary Education in Scotland (often referred to as 'The Primary Memorandum'), published in 1965, set out a curriculum for the primary school designed to catch the interest of children of a wide range of abilities. It proposed teaching methods which were suitable for mixed-ability classes, enabling children to proceed at different rates in the same class.

- 2.1.6 At the same time changes in the public examination system made it more accessible to a larger number and led to consequent changes in curriculum. Particularly important during this period was the fact that teachers became officially involved in planning the new curricula and in developing the examination system through membership of working parties, the Scottish Examination Board (SEB) (now the Scottish Qualifications Authority (SQA)) and the Consultative Council on the Curriculum (CCC) (now Learning and Teaching Scotland (LTS)). The 1960s also saw the rapid expansion of vocational further education, not only through evening classes but, more importantly, through full-time and day-release courses, taught in almost 50 new colleges.
- 2.1.7 In secondary education changes continued throughout the 1970s and 1980s. The process of continuing to provide secondary education for all was taken further by the publication in 1977 of two very significant reports entitled The Curriculum in the Third and Fourth Years of the Scottish Secondary School (The Munn Report) and Assessment for All (The Dunning Report). The latter provided the basis for the current examination system at school leaving age (16), which aims to provide for the whole school population. In vocational further education the introduction of the National Certificate for further education courses, the responsibility of a new Scottish Vocational Education Council (SCOTVEC) (now merged with the SEB to form the SQA), had a similar broad aim.
- 2.1.8 During the 1980s the Government introduced measures to involve parents more in the education of their children, leading to the formation of School Boards and the publication of a Parents' Charter (1991, revised in 1995). The School Board Act set out that every education authority school in Scotland (except nursery schools) should, form a School Board. Boards comprised of elected parent and staff members and members co-opted from the local community. The Board dealt with school matters and provided a focus for the involvement of parents in the running of the school. More recently The Scottish Schools (Parental Involvement Bill) was introduced in 2005 to encourage a broader range of parent representation and to encourage their active involvement in supporting their children's learning
- 2.1.9 Changes and developments to make education more widely available and more effective continued in the 1990s in higher education and further education, as well as in the other sectors. During this period there was an increase in the number of universities. The Scottish Higher Education Funding Council (SHEFC) and the Scottish Further Education Funding Council (SFEFC) were established in 1992 and 1999 respectively (merged in 2005 to form the Scottish Funding Council).

## **2.2 Administrative control and extent of public-sector funded education**

2.2.1 The First Minister for Scotland is responsible for the overall supervision and development of the education system. Day-to-day responsibility for education is delegated to the Minister for Education & Young People (pre-school and school education) and the Minister for Enterprise and Lifelong Learning (post school education and lifelong learning). They are served by the Scottish Executive Education Department (SEED) and the Scottish Executive Enterprise, Transport and Lifelong Learning Department (SEETLLD). Ministers are advised by Her Majesty's Inspectorate of Education (HMIE)<sup>17</sup> and the national bodies dealing with the development of the curriculum (Learning & Teaching Scotland)<sup>18</sup> and public examinations (the Scottish Qualifications Authority)<sup>19</sup>.

2.2.2 The provision of publicly funded education is the responsibility of the 32 unitary councils, known as Scottish Local Authorities (SLAs). The Standards in Scotland's Schools etc. Act 2000 requires education authorities to 'endeavour to secure improvement in the quality of the school education which is provided in the schools managed by them'. It also places a duty on the Minister for Education and Young People to seek to secure improvements in the quality of education nationally. The Act sets out a framework for the improvement of the performance of schools and defines five National Priorities in Education.

- Achievement and Attainment
- Framework for Learning
- Inclusion and Equality
- Values and Citizenship
- Learning for Life

2.2.3 Under this framework, the local authorities are required to publish annual plans showing improvement objectives for the schools in their areas. The schools themselves are required to publish annual development plans taking into account the improvement objectives set by their local authority. Both authorities and schools are also required to publish annual reports on progress.

2.2.4 The Scottish publicly funded primary and secondary schools have been fully comprehensive since the mid 1980s. There are a small number of 'centre of excellence' schools which are broadly comprehensive in intake but also incorporate specialist provision for a small intake of pupils drawn nationally with exceptional talent in sport, music or dance. There are also a very small number of pupils who are 'home educated' through parental choice – around 0.1 percent of pupils aged 5 – 15.

## **2.3 Her Majesty's Inspectors of Education (HMIE)**

2.3.1 The Scottish Parliament and Ministers' stated commitment to raising standards in, and improving the quality of, education provision across Scotland recognises a key role for rigorous independent inspections and reviews to help support the process of

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<sup>17</sup> [www.hmie.gov.uk](http://www.hmie.gov.uk)

<sup>18</sup> [www.ltscotland.org.uk/index.asp](http://www.ltscotland.org.uk/index.asp)

<sup>19</sup> [www.sqa.org.uk](http://www.sqa.org.uk)

continuous improvement in education and in raising standards of attainment. This role is taken forward by HM Inspectorate of Education (HMIE) in Scotland which is an Executive Agency of the Scottish Ministers under the terms of the Scotland Act 1998. As an agency, it operates independently and impartially whilst remaining directly accountable to Ministers for the standards of its work. This status guarantees the independence of HMIE's inspection, review and reporting within the overall context of the Minister's strategic objectives for the Scottish education system.

- 2.3.2 HMIE inspections and review reports inform parents, schools and colleges, other stakeholders, and providers of education and the Scottish Ministers about standards and quality in education. Importantly, the reports identify key strengths, indicate where improvement is needed and offer suggestions on the scope for drawing on best practice elsewhere. In addition to providing individual inspection reports on the performance of individual educational establishments and local authorities, HMIE regularly publish high-level summary reports based on analysis of its accumulated inspection evidence, sometimes on specific aspects of education and, approximately every three years looking across the quality of Scottish educational provision as a whole.

## **2.4 Independent schools**

- 2.4.1 This report focuses almost exclusively on the publicly funded school system (state sector). However mainly for the purposes of completeness the following overview on Scotland's Independent schools is provided.
- 2.4.2 The vast majority of Scottish pupils attend publicly funded school, with just under 3 percent of primary aged pupils, and just over 5 percent of secondary aged pupils attending Independent schools<sup>20</sup> [excluding special schools]. Independent schools are defined as "a school at which full-time education is provided for pupils of school age (whether or not such education is also provided for pupils under or over that age), not being a public school or a grant-aided school". All independent schools in Scotland are required, in accordance with the Education (Scotland) Act 1980, as amended, to be registered with the Registrar of Independent Schools. The Registrar is an official of the Scottish Executive appointed by the Scottish Ministers
- 2.4.3 The independent sector covers preparatory, special, primary and secondary schools, and also senior, all through, boarding, single-sex and religious denomination schools. Many offer facilities to children with special needs and many offer bursaries or financial assistance based on ability and financial need.
- 2.4.4 Independent schools make use of both the Scottish exam system and that offered in England, additionally some may offer international qualifications. Decisions on which examination system to follow are taken by individual schools. Guidance notes from the Scottish Executive state that "Ministers expect children in Scotland to receive a broad and balanced curriculum, which increases pupils' skills and knowledge." They are also subject to inspection by HM Inspectorate of Education and where appropriate their examination results are included in those statistics publicly presented by the

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<sup>20</sup> Independent School Census – 2006 : Scottish Executive

Scottish Executive. Unlike many EU countries, independent schools in Scotland receive no public subsidy – although their charity status enables some tax breaks.

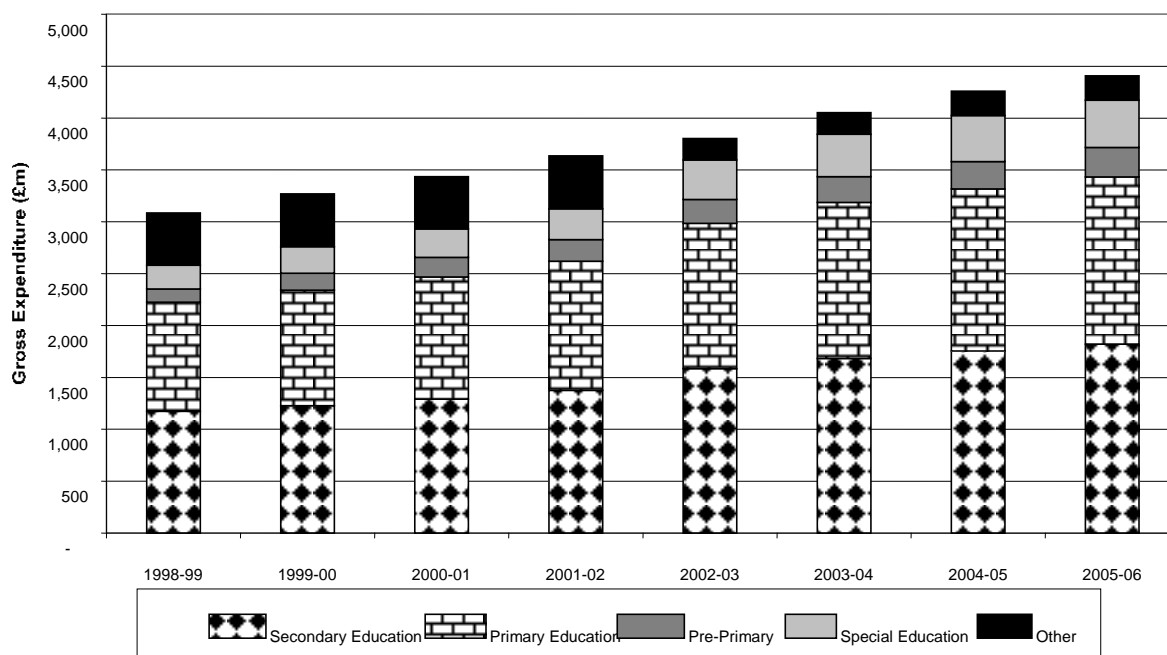
- 2.4.5 Across the Primary and Secondary sector the location of independent schools is heavily skewed. Over one third of pupils attending independent primary or secondary schools go to ones based in Edinburgh, with a further 20 percent attending schools in Glasgow and another 10 percent going to Aberdeen schools. In Edinburgh, where the greatest concentration of such schools lies, more than 1 in 5 of those pupils attending secondary school in Edinburgh are in the independent sector – ranging from 20 percent of S1 pupils, through to over 1/3 of pupils in S6.

## **2.5 Expenditure**

- 2.5.1 Around 98 per cent of expenditure on Scottish education is managed and distributed by Local Authorities (LAs). The main source of funding for LA expenditure is the Scottish Executive. The Scottish Executive uses the Grant Aided Expenditure (GAE) formula as a basis for estimating the cost of providing a particular service. The formula, having taken account of the total income LAs will receive, is then used as the basis for calculating the Revenue Support Grant which represents the actual funding the Executive will provide LAs. Overall, LAs have the power to decide how much of their total income will be spent on each of their services, including education and typically the education spend is on average the kind of figure identified through the GAE process.
- 2.5.2 Gross revenue expenditure (i.e. total spend including Public Private Partnership service payments but not other capital spend) on education by LAs in 2005-06 was £4,406m. This represented an increase in real terms of 3.5 per cent on the previous year (Chart 3) and continues the trend of year on year increases in real terms since 1998-99.



**Chart 3: Gross Revenue Expenditure by Local Authorities in Real Terms (£m)**

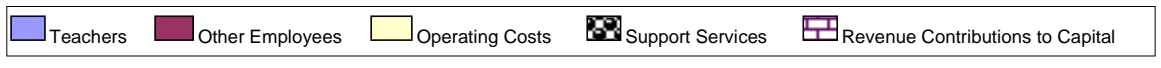
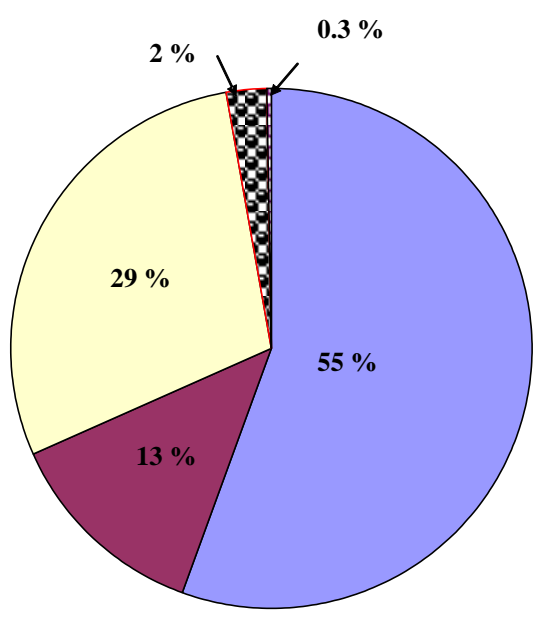


2.5.3 Available data on expenditure (in real terms) (from 2002-03) shows that major drivers behind the increase in Education expenditure have varied between the three largest categories of spend which are teacher salaries, other employees and operating costs. For example between 2003-04 to 2004-05, expenditure on teachers represented around 70 percent of the increase in spend, whilst in 2002-03 to 2003-04 expenditure on other employees accounted for around 40 percent in the increase in spend<sup>21</sup>.

2.5.4 The relative proportion of spend does however remain fairly consistent. Data for 2005-06 show how Local Authority expenditure on education (Chart 4) is broken down with the biggest single expenditure item being teachers' pay, making up 55 percent of total LA spending. Operating costs make up almost a third of LA education expenditure.

<sup>21</sup> Expenditure on School Education in Scotland – 2005 : Scottish Executive

**Chart 4: Key components of Expenditure (2005-06)**



## **Chapter 3: Sectors: Pre-School, Primary, Secondary and Further and Higher Education**

### **3 Pre-primary education**

3.1.1 The Pre-school sector is an increasingly important and sizeable sector of the Scottish Education system. A major aspect of this change has been The Standards in Scotland's Schools Scotland Act 2000 which places local authorities under a duty to secure pre-school provision for all three and four year olds whose parents want it. This is usually delivered over five sessions a week, each of around 2.5 hours, over the school year. Enrolments indicate that around 80 percent of eligible 3 year olds and well over 90 percent of eligible 4 year olds receive pre-school education.

3.1.2 Across Scotland there are over 2,700 centres with 12,500 staff and over 100,000 registrations. The centres are a mixture of local authority nursery classes in primary schools (42 percent), and stand alone nurseries or part of children / family centres of which 28 percent are publicly funded, 35 percent private and 36 percent voluntary.

### **3.2 Primary and Secondary**

#### **3.2.1 Admissions**

3.2.1.1 In Scotland children attending local authority schools must begin school on the day term starts in the August after their fifth birthday, however, local authorities can also set a date after the start of the August term, and if a child reaches five on or before this date then they can attend school in the August before their fifth birthday<sup>22</sup>. In practice this generally means that children born between the day term starts in August and the 28<sup>th</sup> February can start school in the August preceding their fifth birthday, if their parents wish them to do so.

3.2.1.2 Most education authorities allocate children to schools in their area by defining catchment areas for each school. The Education (Scotland) Act 1980, as amended in 1981 and 2000, allows parents to express a preference for the particular school they want their child to attend, even if they do not live within the catchment area for that school. If parents express a preference for a particular school (through a "placing request"), the education authority has a duty to grant the request wherever possible. Parents have a right to appeal against an education authority's decision not to grant their placing request, first to the authority itself and then to a court. Pupils are admitted to secondary education from primary schools when they have completed seven years of primary education (on average they are aged 12). There are no restrictions on entrance e.g. no entrance examinations and no repeated years except for a very few children on the advice of educational psychologists.

3.2.1.3 Placing requests typically happen at the start of primary and secondary schools. Latest figures indicate that 23 percent of P1 pupils were the subject of placing requests, with the comparable figure for S1 pupils being 14 percent. The pattern of placement requests over the last 10 years has remained fairly steady with around 25 to 27

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<sup>22</sup> Children can therefore start school between 4 ½ and 6 years of age.

thousand requests being granted each year. Patterns of application across the country will be heavily influenced by geographic location of alternative schools and the mixture of denomination and non-denomination schools.

### **3.2.2 Length of the school day/week/year**

3.2.2.1 Schools are open to pupils for 190 days a year. The local authority determines the actual dates of terms. The school year usually starts in mid-August and finishes around the end of June. Local authorities operate very closely to a standard norm for the number of weekly taught hours: 25 hours for primary schools (with in some cases reduced hours for infants) and 27.5 hours for secondary schools.

### **3.2.3 Curricular control and content**

3.2.3.1 Secondary schools generally offer a similar range of subjects at each stage, in line with national guidelines. The core subjects at each stage are generally similar but what is offered beyond minimum percentage time allocations for broad curricular areas is a matter for the school and local authority to decide. Pupils have different specialist teachers for different subjects. They may be taught as a whole class or in groups within the same class in order to differentiate teaching. Details on classes sizes are set out in para 3.5.6, but in addition to the broad maximums at various stages, in certain practical subjects, e.g. science, the number of pupils is restricted to 20.

3.2.3.2 The curriculum is not determined by statute or regulation but by guidance and advice provided through the national curricular advisory body, Learning & Teaching Scotland, in various national curriculum guideline documents. At primary level, the curricular areas are language, mathematics, environmental studies, expressive arts, and religious and moral education with Personal & Social Development (PSD) and Health Education. At lower secondary level the curriculum is divided into two stages. The first two years (S1 and S2) provide a general education following the National 5-14 Programme. The third and fourth years (S3 and S4) have elements of specialisation and vocational education options. There is an increasing trend towards alternative curricula, including off-site options, for some pupils.

3.2.3.3 The whole curriculum covering ages 3-18 was recently subject to an integrated national review. This was the first time such a comprehensive review has taken place in recent times. It led to the publication of ‘A Curriculum for Excellence’<sup>23</sup> in November 2004. This document sets out the broad purposes of school education and sets out a framework of principles and characteristics around which the curriculum should be designed. A major programme is now underway to embed the principles of ‘a Curriculum for Excellence’ in practice through revising curricular guidance for particular sectors, revising qualifications and assessment and supporting a range of development work and training. This implementation programme is at an early stage and planned to last for several years.

### **3.2.4 Assessment, progression and qualifications**

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<sup>23</sup> <http://www.scotland.gov.uk/Publications/2004/11/20178/45862>

3.2.4.1 The overall purpose of assessment to support learning is to provide all partners with sufficiently dependable information and feedback to inform judgements, choices and decisions about learning, and to inform planning for improvement. The diagram below (Chart 5) outlines the four coherent parts of the assessment system in Scotland, designed to support both assessment for learning and assessment for monitoring and accountability.

**Chart 5: Assessment System**

<b>Formative</b>	
Formative assessment	Local authority collection and analysis of information to inform provision and improvement
Personal Learning planning Involving learners, and parents and other adults, in the learning process	HMIE inspection feedback and subject / quality / improving reports
<b>Internal</b>	Follow-through inspection activities
<b>External</b>	
Teachers' judgements and reports with local moderation and National Assessments as part of understanding and sharing standards	Scottish Survey of Achievement (P3, P5, P7, and S2) National Qualifications (SQA) International Studies HMIE inspections and reports on Authorities and schools
<b>Summative</b>	

3.2.4.2 Within the Scottish system, various partners have a role in developing and using appropriate material. Schools, children and parents participate in internal assessment – both formative and summative, and local authorities, HM Inspectors of Education (HMIE) and the Scottish Executive also gather and use information from external assessment to form judgements about the quality of learning and planning for improvement.<sup>24</sup>

3.2.4.3 At primary level, teachers assess their pupils' progress in a variety of ways which include observing them work, discussing their work with them, setting special tasks in which the teacher can make judgements about the pupils' performance and setting tests, some of which will be school tests and others national. They are given guidance on the process of assessment and evaluation in 'Assessment is for Learning – self

<sup>24</sup> Arrangement set out in Circular No. 02, June 2005 : Assessment and Reporting 3 - 14

evaluation toolkits<sup>25</sup>. Teachers have access to a bank of National assessment materials to confirm their professional judgement of the attainment levels reached by pupils.

3.2.4.4 Nationally, the Scottish Executive commissions the Scottish Survey of Achievement to provide a national picture of the standards being reached by pupils throughout the primary and early secondary years. This survey based approach provides national and some local authority data on attainment at the P3, P5, P7 and S2 stages. It is designed not to provide school-level estimates of attainment, to avoid any risk of creating distorting incentives for individual schools to ‘teach to the test’.

3.2.4.5 Assessment, testing and reporting policy puts the learner at the centre of the assessment process and emphasises assessment as part of learning and teaching. The policy has been developed and supported by the ‘Assessment is for Learning’ programme which has sought to join-up research, policy and practice; working with and supporting, practitioners and schools to build informed communities of practice. Three main strands of assessment activity now underpin the programme:

- assessment FOR learning
- assessment AS learning
- assessment OF learning

Each strand has a number of key features attached to it, detailed in support materials for the ‘AiFL school – as place where everyone is learning together’<sup>26</sup>

3.2.4.6 In Secondary school, pupils are subject to continuous assessment according to the internal procedures of each school and are promoted automatically to the next class. In the first two years of lower secondary education (S1/S2) assessment is carried out in accordance with the assessment, testing and reporting policy for 3 – 14 year olds. Usually in S4, pupils begin to take the National Qualifications<sup>27</sup> offered by the Scottish Qualifications Authority (SQA). These qualifications, intended to be attainable by all pupils, cover individual subjects (maths, English, geography etc) and core skills (communication, problem-solving, team working etc), are gained by external examination together with an element of assessment carried out by the school itself and moderated by the SQA. The National Qualifications taken will predominately be a combination of Standard Grades, National Units and National Courses which include Higher and Advanced levels at the senior stage. These courses are linked together through the Scottish Credit and Qualifications Framework (SCQF)<sup>28</sup> which assigns 12 levels from Access 1 (level 1) through to Doctorate (level 12).

### 3.2.5 Additional Support Needs<sup>29</sup>

3.2.5.1 There is a statutory presumption that children with additional support needs should be educated within mainstream schools, with targeted support as required, unless it is

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<sup>25</sup> <http://www.ltscotland.org.uk/assess/toolkit/index.asp>

<sup>26</sup> <http://www.ltscotland.org.uk/assess/about/aiflschool.asp>

<sup>27</sup> [http://www.ltscotland.org.uk/NO/images/NOQuickGuide06\\_tcm4-336052.pdf](http://www.ltscotland.org.uk/NO/images/NOQuickGuide06_tcm4-336052.pdf)

<sup>28</sup> <http://www.scqf.org.uk/>

<sup>29</sup> <http://www.scotland.gov.uk/Topics/Education/Schools/welfare/ASL>

clear that the best interests of the child require non-mainstream alternatives. Local authorities determine the kind of special needs provision they wish to make for their pupils, but for most pupils the provision is co-ordinated by specialist learning support teaching staff. In practice about 1 percent of the total number of pupils at Scottish local authority schools attend a special school and this proportion has been broadly stable in recent years. In addition, there are around 1,100 pupils who attend independent special schools.

### **3.3 Special Schools**

3.3.1.1 A school is identified as a special school if the sole or main purpose of the school is to provide education specifically suited to the additional support needs of children and young people selected for attendance at the school by reason of those needs.

3.3.1.2 Parents have a right to express a preference for a particular school that they want their child to attend, including a special school. Councils do not have to admit children into a special school. For example, if the parents of a child want send him or her to a particular school which has been provided for children with additional support needs, and the Council thinks that their child does not need the special equipment or specifically trained staff they have provided in that school, then the Council does not have to admit the child.

### **3.4 English as an additional language (EAL)**

3.4.1.1 The extent to which authorities need to make special provision for pupils for whom English is an additional language varies very markedly across Scotland, with the highest demand being concentrated in the cities and the central belt. Many authorities have considerable experience of teaching pupils for whom English is an additional language. In some areas the recent increases in demand for support are causing pressures. The current focus of EAL teachers is on building capacity of class teachers and additionally authorities are employing bilingual support staff to support migrant workers and their families.

### **3.5 Teachers**

3.5.1.1 School teachers in the public sector in Scotland are appointed and employed by the local authorities. They do not have civil servant status. Their conditions of service are negotiated at the national level by the Scottish Negotiating Committee for Teachers (SNCT), a tripartite body comprising membership from the local authority employers, representatives from the teacher organisations and the Scottish Executive. All who wish to teach in publicly funded primary and secondary schools in Scotland are required to have undergone initial training and to hold a Teaching Qualification in order to be registered as teachers with the General Teaching Council for Scotland (GTCS). Teachers who have achieved the Teaching Qualification are provisionally registered with the GTCS. Full registration then follows a period of probation and assessment which generally lasts for one year.

3.5.1.2 Most secondary teachers enter the teaching profession, after taking a degree, through the Post-Graduate Diploma in Education (PGDE) course. A few enter through the Bachelor of Education (BEd) degree which is offered in a limited number of subjects

and a few through combined degrees which include subject study, study of education and school experience. In the primary school sector, the more traditional route was through the BEd, although in recent years – and partially driven by the current recruitment drive – increased numbers are taking the PGDE route. Since August 2002, all newly qualified teachers have had access to a training post for one school year immediately following qualification through the Teacher Induction Scheme. To become fully GTCS registered, probationers will have to meet the standards set out in the Standard for Full Registration (SFR)<sup>30</sup>.

### 3.5.2 **Teacher Numbers: Primary Sector**

3.5.2.1 Over the last 15 years the number of teachers in the primary sector has fluctuated between 22,200 and 23,000. In the second half of this period, the pupil teacher ratio has fallen from almost 20 pupils per teacher (this is not class size) to around 17 pupils per teacher. The teacher gender split continues to be heavily bias towards women, with around 93 percent of primary teachers being female – however less than 8 percent of female teachers are headteachers compared with almost 1 in 4 male teachers.<sup>31</sup> The most recent figures on recruits suggest that females teachers coming into the profession outnumber males teachers 10 to 1.

### 3.5.3 **Teacher Numbers: Secondary Sector**

3.5.4 Over the same period the number of secondary school teachers has fluctuated from 23,800 to just over 25,600 with the pupil teacher ratio peaking at 13.2 in 1997 and falling to 12.3 in 2005. The gender split is less marked than in the primary sector, although over the last 10 years the split has changed from 50:50 to 60:40 in favour of female teachers. Looking at headteachers, less than 0.5 percent of females teachers are heads, whereas 2.7 percent of male teachers are heads.<sup>32</sup> Looking at recent recruits into the teaching profession there continues to be a significant gender bias which over 2004 and 2005 has been steady at 60:40 in favour of female teachers.

3.5.4.1 There is limited comparable data on salaries, but in recent years – mainly as a result of the ‘Teaching Profession for the 21<sup>st</sup> Century’ (aka McCrone) agreement – there have been significant increases in teacher salaries particularly at the entry level. Over the period 1997 to 2007, the basic starting salary will increase by 55 percent. Comparable data from the period 1997 to 2004, shows that starting salaries for teachers have increased by 44 percent, compared with under 30 percent for police, trainee fire-fighters and junior house officers (Doctors), and 40 percent for nurses. Aligned to this, the time to reach the maximum salary band for classroom teachers has been substantially reduced.

3.5.4.2 Comparable data on teachers in lower secondary across the OECD places Scottish teachers towards the top of the list when looking at salary after 15 years teaching experience (within the main salary band rather than all teachers). Scotland’s ratio of

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<sup>30</sup> <http://www.gtcs.org.uk/Probation/StandardFullReg/TheStandardforFullRegistration.asp>

<sup>31</sup> Teachers in Scotland – 2005 : Scottish Executive

<sup>32</sup> Teachers in Scotland – 2005 : Scottish Executive



salary after 15 years to GDP per capita is above the OECD average and considerably above the EU19 (the 19 EU states which are members of OECD) average.

3.5.4.3 Looking at hours taught (in 2004) Scotland has the fourth highest number of teaching hours per year in lower secondary education (2004) (893 compared to the OECD average of 704 and the EU19 average of 667) of all the OECD countries. Unlike many other OECD countries, the number of teaching hours in primary schools is only 6 percent higher than those in upper secondary schools compared with the OECD average of 21 percent and the EU19 average of 25 percent.

### 3.5.5 Pupil Numbers (Primary and Secondary Schools)

**Table 6: Table of pupil numbers by stage and sector**

Stage	State Sector (Sept 06)		Independent Sector (Sept 05)		Average Age of Pupils (years)
	Number of Schools	Number of Pupils	Number of Schools	Number of Pupils	
<b>P1</b>		51,247		1,360	5
<b>P2</b>		52,222		1,442	6
<b>P3</b>		53,403		1,405	7
<b>P4</b>		55,351		1,624	8
<b>P5</b>		56,438		1,664	9
<b>P6</b>		56,609		1,887	10
<b>P7</b>		57,513		2,210	11
<b>TOTAL (PRIMARY)</b>	<b><u>2,184</u></b>	<b><u>382,783</u></b>	<b><u>63</u></b>	<b><u>11,592</u></b>	
<b>S1</b>		57,646		2,846	12
<b>S2</b>		58,876		2,998	13
<b>S3</b>		61,193		3,035	14
<b>S4</b>		61,697		3,048	15
<b>S5</b>		47,469		3,070	16
<b>S6</b>		26,098		2,600	17
<b>TOTAL (SECONDARY)</b>	<b><u>381</u></b>	<b><u>312,797</u></b>	<b><u>55</u></b>	<b><u>17,597</u></b>	
<b>PRIMARY AND SECONDARY</b>	<b><u>2,565</u></b>	<b><u>695,762</u></b>	<b><u>118</u></b>	<b><u>29,189</u></b>	

Source: Pupil Census 2006, Independent School Census 2005 – Scottish Executive

Note: Excludes 6,975 pupils in public sector special schools and 1,132 pupils in independent special schools

### 3.5.6 Class Sizes

3.5.6.1 The Scottish Executive has in place a number of class size regulations and targets. Currently the maximum class size between P1 – P3 is 30 pupils, and for P4 – P7 it is 33 pupils. During 2007 a commitment is in place to reduce P1 class sizes to 25, and

for S1/2 English and maths classes to be a maximum of 20 pupils<sup>33</sup>. On average primary class sizes are

**Table 7: Average primary class sizes by type of class and stage, 1999 - 2006**

Class Type	1999	2000	2001	2002	2003	2004	2005	2006
P1	24.0	23.7	23.7	23.5	23.2	23.2	23.1	22.9
P2	25.4	25.0	24.8	24.6	24.3	24.6	24.2	24.2
P3	26.4	26.0	25.3	25.3	24.6	25.1	25.1	25.0
P4	27.0	26.6	26.5	26.3	25.9	26.1	26.0	25.9
P5	27.1	26.7	26.7	26.5	26.2	26.5	26.3	26.4
P6	26.7	26.7	26.7	26.6	26.3	26.2	26.2	26.3
P7	26.0	25.8	26.2	26.0	25.7	25.9	25.4	25.6

Source: Pupil Census 2006 – Scottish Executive

3.5.6.2 In addition Scotland has a number of composite classes at Primary school level (which cover more than one stage). The maximum is set at 25 pupils, and the average class has typically been around 20 pupils. Pupils are generally taught in mixed ability classes at primary level.

3.5.6.3 In 2003 (the latest available) average class sizes for S1/S2 Maths were 25.4 pupils; for S1/S2 English they were 25.9 pupils. Pupils are generally taught in mixed ability classes with some setting by ability in Secondary subjects at the discretion of the school and the local authority.

### **3.6 Gaelic-medium education**

3.6.1.1 The vast majority of pupils learn in English, although Gaelic-medium education is also available in a very small number of primary and secondary schools. These schools are concentrated in the Highlands and Islands. Across Scotland less than 0.2 percent of primary school pupils are taught exclusively in Gaelic and a further 0.3 percent taught in Gaelic (with elements in English). At secondary level just over 0.1 percent of local authority pupils are taught in Gaelic for subjects other than Gaelic. Recently, in August 2006, the Glasgow Gaelic School opened which caters for pupils from pre-5 through to the end of secondary (S6) and teaches exclusively in Gaelic. In spring 2007 a new school is scheduled to open in Inverness, which will provide education exclusively in Gaelic to pupils in the pre-school and primary education age ranges.

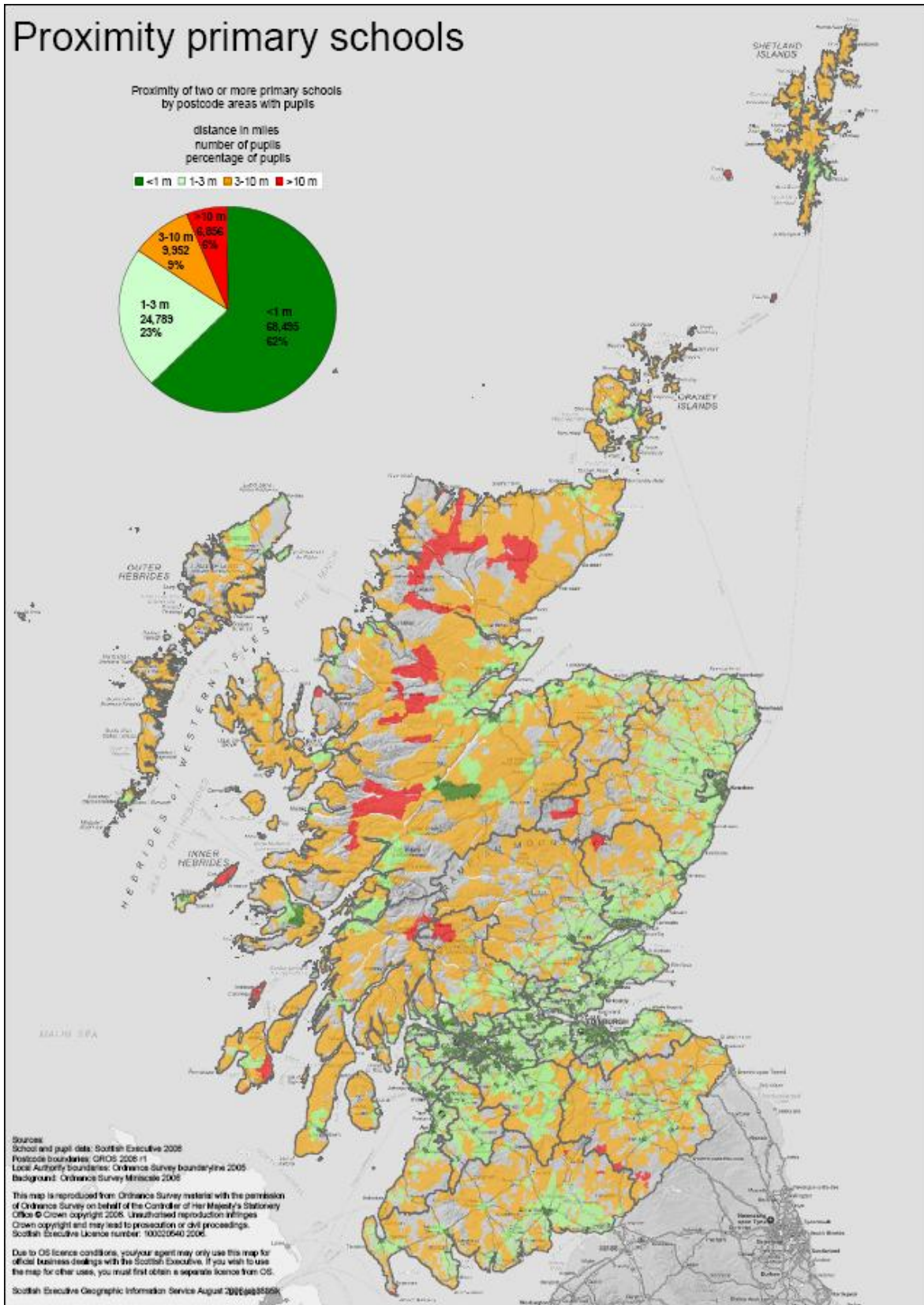
### **3.6.2 Geographical access to schools**

3.6.2.1 As noted earlier Scotland is predominately a rural country with substantial clustering of the population into urban areas. The following charts indicate the impact this population spread has on the availability of schools. At primary school age, 85

<sup>33</sup> This target is now being interpreted as the maximum class sizes in S1/2 English and maths on average in a school should be no more than 20 pupils. This allows schools flexibility to balance smaller classes for certain pupils within the context of reductions in class sizes across the board.

percent of pupils have a local authority primary schools within 3 miles of their home, but at secondary school level this drops to just over 40 percent.

**Chart 8: Access to Primary Schools**



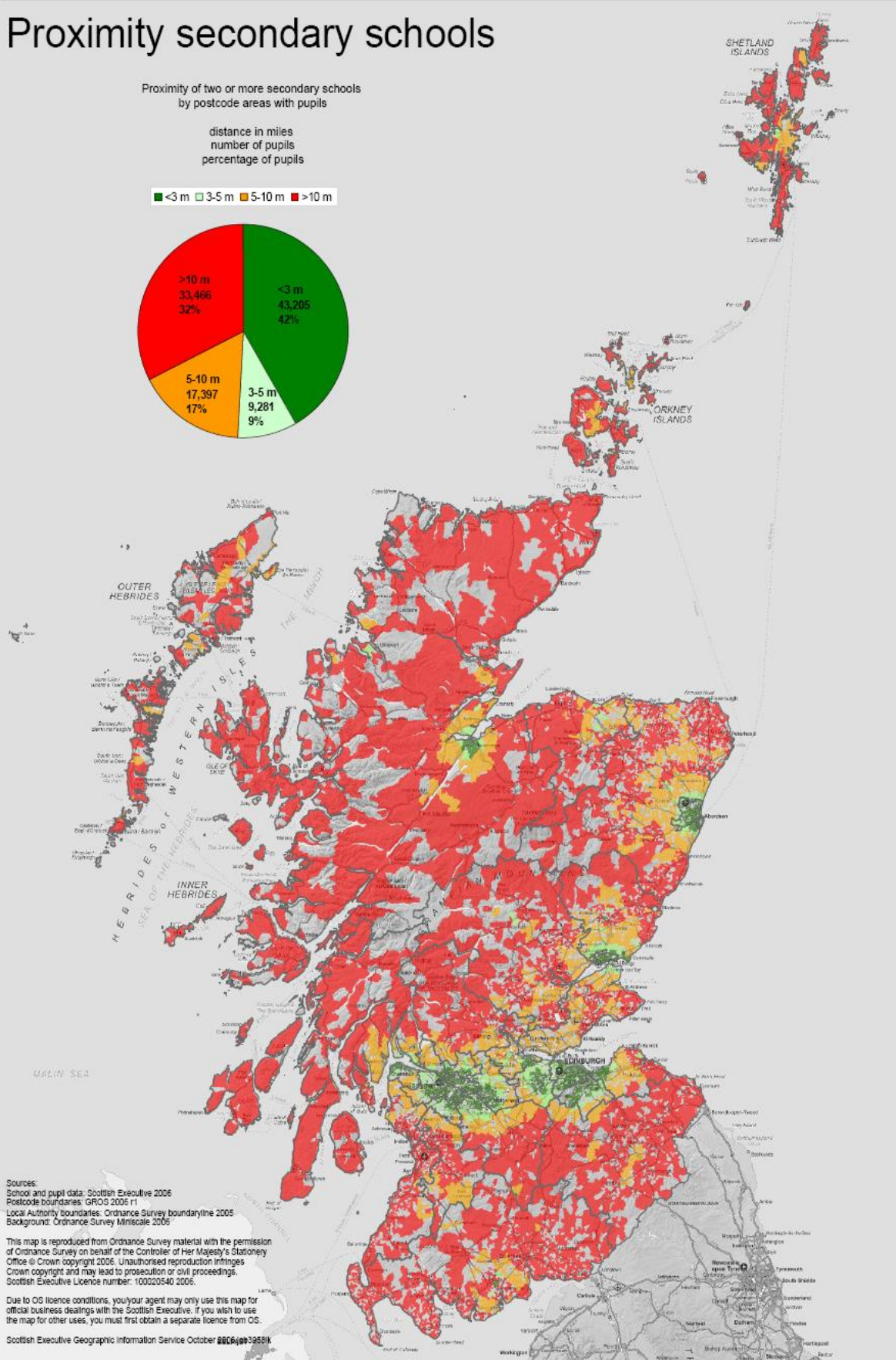
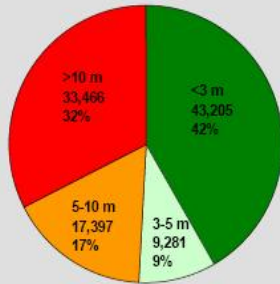
**Chart 9: Access to Secondary School**

# Proximity secondary schools

Proximity of two or more secondary schools  
by postcode areas with pupils

distance in miles  
number of pupils  
percentage of pupils

■ <3 m ■ 3-5 m ■ 5-10 m ■ >10 m



Sources:  
School and pupil data: Scottish Executive 2006  
Postcode boundaries: GROS 2005 IT  
Local Authority boundaries: Ordnance Survey boundaryline 2005  
Background: Ordnance Survey Minscale 2005

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### **3.7 Faith Schools within the Public Sector**

3.7.1.1 A number of local authorities fund denominational (or faith) schools. These are almost entirely Roman Catholic and across Scotland account for around 15 percent of the primary and secondary local authority funded sector. Faith schools have to take all children who live within their local catchment area and wish to attend the school. However local authorities can set criteria for deciding on when to grant placing requests, and this can include giving preference to children who are of the school's faith.

### **3.8 Upper secondary and post-secondary education (Schools and Colleges)**

#### **3.8.1 Types of education**

3.8.1.1 The statutory school leaving date is based on the term within which a pupil's birthday sits but it is typically seen as when a pupil is 16. Over the last 10 years, the percentage of S3 (penultimate year of compulsory schooling) pupils who stay on to S5 (first year of schooling post compulsory) has fluctuated between the mid and late 70s, with a slight peak at the turn of the century. Typically the percentage of females staying on is around 7 percentage points higher than for males<sup>34</sup>. Just under one half of S3 females stay on in S6, with around 40 percent of S3 boys staying on to S6. Once a pupil has reached the minimum school leaving age (16 years of age), they have the opportunity to either continue school (stages S5 and S6), take up a place at one of 43 colleges (often referred to as further education colleges) across Scotland or seek training or employment.

3.8.1.2 There are no formal qualifications required for admission to post-compulsory education, although schools and further education colleges may set specific requirements for admission to individual courses. Students are free to apply to the institution and for the course of their choice. Students remaining in schools will typically continue on a full-time basis following the traditional range of National Qualifications.

3.8.1.3 During the mid and late 1990s, the percentage of leavers going into Further Education (FE), Higher Education (HE) and Employment rose at a slow but steady rate. During the early part of the century the pattern changed with a plateauing of the HE levels which is still continuing (around 30 percent of leavers), a dip in Employment levels which has since returned back up to pre 2000 levels (just above 25 percent), and the continuation of the slight but steady increase in FE figures (now standing at 23 percent). Since the early 1990s, the percentages going into training has dropped significantly and since the early part of the century has flatten out to around 5 percent of leavers.<sup>35</sup>

#### **3.8.2 Curricular control and content**

3.8.2.1 Students choose courses of study leading to nationally recognised Scottish Qualification Certificate qualifications from the range offered by the school or

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<sup>34</sup> Pupil Census – 2005 : Scottish Executive

<sup>35</sup> Destination of Leavers from Scottish Schools – 2006 : Scottish Executive

college. A programme of National Qualifications including and beyond Standard Grade has been in place since August 1999 for schools, colleges and other centres.

### **3.8.3 Assessment and qualifications**

3.8.3.1 Forms of assessment depend on the qualification, but may include one or more of written, oral and practical examinations or continual assessment. Qualifications will predominately focus on those offered through National Qualifications, Higher National Qualifications or Scottish Vocational Qualifications.

### **3.8.4 Further Education Colleges**

3.8.4.1 Further education colleges offer a wide range of courses at a range of levels (below degree level) which provide continuing education beyond school or preparation for further study. They vary considerably in size and the range of courses which they offer. They cater for both full-time and part-time students, with part-time students in the majority. The courses are mainly vocational and include both theoretical and practical work. Colleges also offer courses leading to awards recorded on the Scottish Qualifications Certificate (SQC) and advanced vocational courses, which are classed as higher education courses, leading to the award of a Higher National Certificate (HNC) or a Higher National Diploma (HND).

### **3.8.5 Higher Education**

3.8.5.1 There are 20 higher education institutions (HEIs), comprising 14 universities (including the Open University) and 6 other institutions. They are mainly funded by the Scottish Funding Council. HEIs tend to be situated in highly populated areas but some serve more sparsely populated areas; over 90 percent of the population live within 30 minutes driving time of a college. In addition, all HEIs provide some form of outreach facility to make learning opportunities more accessible. To provide for students in areas remote from institutes, there have been considerable advances in the use of distance learning techniques. The rural institutes also receive additions to their grant allocations to take account of their location. One higher education institution, the University of the Highlands and Islands Millennium Institute (UHIMI) is a consortium involving eight colleges and a number of research institutes and other partners.

3.8.5.2 The usual entry requirement for higher education courses is a group of awards at grades A-C (which are the pass grades) in the National Qualifications Higher or Advanced Higher level examinations set by the Scottish Qualifications Authority (SQA), or qualifications deemed by a higher education institution to be equivalent to these. For many HE courses the candidate needs to hold awards at specified levels. Awards in the English General Certificate of Secondary Education (GCSE) and GCE Advanced Level (or the equivalent) are also accepted. For some HE courses, particularly HNC and HND a group of appropriate National Certificate (NC) awards (often achieved in college courses) may be acceptable.

3.8.5.3 The Universities and Colleges Admissions Service (UCAS) process most applications for entry to higher education institutions in Scotland.

## Chapter 4: Summary of Strategy and Policies for improvement

### 4 Background

4.1.1 Since 2004, the over-arching national strategy for improving the quality of Scottish school education has been set out in a document called *Ambitious, Excellent Schools*<sup>36</sup> (AES) which sets out a suite of policies and programmes designed to bring about a comprehensive programme of modernisation in Scottish education. Key related documents include ‘A Curriculum for Excellence’<sup>37</sup> and ‘Assessment, Testing and Reporting 3-14’<sup>38</sup>, which constitute key strands within the ‘Ambitious Excellent Schools’ agenda.

4.1.2 AES highlights that, over the past four years, there has been significant investment in improving resources, including staffing and the quality of infrastructure, to support education. The main elements are:

- a) Taking forward the school building programme following the 2003 publication of a joint Executive – Convention of Scottish Local Authorities (CoSLA) “School Estate Strategy”. There is a commitment for 200 new or substantially refurbished schools by end 2006, rising to 300 by 2009, supported by Public Private Partnership (PPP) projects underway totalling some £2.3 billion and several fold increases in annual Executive capital grant for schools (e.g. £28m in 2002-03, and £131m this year).
- b) Delivering the ‘Teaching Profession for the 21<sup>st</sup> Century’<sup>39</sup> (aka McCrone) agreement, focusing on better recognition and rewards for teachers and creating the conditions for more professionalism and freeing up teachers to teach;
- c) Employing more teachers at a time of falling school roles. Since 1997, the number of pupils has fallen by over 50,000 and the number of teachers based in schools has risen by just under 3,000.

4.1.3 Key challenges identified for the school system are:

- making the curriculum relevant, engaging and stretching for every child
- raising the achievements of the lowest-attaining 20 percent of pupils and those in danger of becoming part of the Not in Education, Employment or Training (NEET) group after leaving school
- raising standards of attainment overall, and stretching aspirations and attainment where expectations are too low

4.1.4 Beyond investment in resources, AES organises the set of national policies intended to address these challenges according to five key objectives:

- heightening expectations, stronger leadership and ambition

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<sup>36</sup> Scottish Executive’s agenda for comprehensive modernisation of Scottish Schools

<sup>37</sup> <http://www.scotland.gov.uk/Topics/Education/Schools/curriculum>

<sup>38</sup> <http://www.scotland.gov.uk/Topics/Education/Schools/curriculum/5to14ass/Q/forceupdate/on>

<sup>39</sup> <http://www.scotland.gov.uk/Topics/Education/Schools/Teaching/PAC>

- more freedom for teachers and schools,
- greater choice and opportunity for pupils,
- better support for learning
- tougher, intelligent accountabilities.

A brief summary of the policies falling under each of these objectives now follows.

## **4.2 Heightened expectations, stronger leadership and ambition**

4.2.1 A new excellence standard has been introduced to ‘raise the bar’ for school inspections and (with the support of a private charitable foundation) a broad programme of leadership development opportunities for senior school and local authority staff has been created. The ‘Standard for Headship’ has been revised to reflect shared leadership priorities and continue to support enhanced Continuous Professional Development (CPD) for teachers. There has been the establishment of 28 Schools of Ambition (see Annex A) in a programme which aims to

- raise the ambitions of schools
- bring about transformational change,
- and instil belief and ambition in pupils.

## **4.3 More freedom for teachers and schools**

4.3.1 Devolved school management has been extended to give head teachers new opportunities to develop their schools to best meet local needs. There has also been an intensive focus on reducing class sizes which has involved releasing extra probationers into schools and recruiting extra postgraduate students, together with releasing additional funding to reduce class sizes in P1 and in S1 and S2 Maths and English.

4.3.2 The discipline agenda, ‘Better Behaviour, Better Learning’, is focused on the promotion of positive behaviour approaches in schools, with sanctions and local decision making on support bases for pupils and exclusion where needed as a last resort. All schools have behaviour policies, and there has been significant implementation of rules and rewards, buddying and peer mentoring, anti bullying, and use of additional support staff. There have also been more innovative approaches in around half of schools such as behaviour co-ordinators, and whole school initiatives such as restorative practices, motivated schools and solution orientated schools.

## **4.4 Greater choice and opportunity for pupils**

4.4.1 The choice and opportunity agenda is focused on trying to ensure that young people have a secure foundation in literacy, numeracy and other essential skills, whilst having the opportunity to develop the other personal skills and talents most important to them. A key plank of this agenda is the new Skills for Work courses (see Annex B) and the provision of funding for Continuous Professional Development (CPD) opportunities aimed at enabling primary teachers to develop specialist skills.

4.4.2 Through the Assessment is for Learning (AifL) programme there is the promotion of a streamlined and coherent system of assessment to ensure all partners in learning



(pupils, parents, teachers / staff, schools / early years centres, local authorities, Scottish Executive) have the information and feedback they need to inform improvement. For schools this involves promoting and developing professional assessment practice which supports learning and gives learners, the feedback they need to improve their learning.

4.4.3 As noted earlier, implementation of ‘A Curriculum for Excellence (ACfE)’ is a major strand of the overall strategy (see Annex C) - ACfE defines the purposes of school education as being to ensure that all young people are *successful learners, effective contributors, confident individuals* and *responsible citizens*. The aim of the ACfE review is to take a fresh look at what is taught and how, so that every child fulfils their potential and Scotland’s education system continues to meet the challenges of the 21<sup>st</sup> century.

4.4.4 Themes of the review are

- what it is important for children to learn,
- making learning more motivating and relevant,
- including more learning related to the world of work,
- placing literacy and numeracy at the centre,
- giving an early boost to science, and
- simplifying and prioritising the curriculum.

4.4.5 The new approach to the curriculum will need to be reflected in the qualifications system, and options and proposals for appropriate assessment and qualifications, including how to recognise pupils’ wider achievements, are being developed. The intention is to consult around autumn 2007.

4.4.6 A Curriculum for Excellence also focuses on health promotion<sup>40</sup> as an important objective which schools should be pursuing. In that regard ACfE reflects developments which were already well underway in Scottish schools; indeed all schools in Scotland were already working towards becoming health promoting schools by 2007. *Hungry for Success*, introduced in 2003, set national, nutrient defined standards for school meals in Scotland.

## 4.5 Better support for learning

4.5.1 Activity in this area has focused largely on the implementation of the Additional Support for Learning Act (2004), which aims to ensure that all children and young people receive the additional support required to meet their individual needs and reach their full potential. The Act has led to a number of specific developments including the publication of a new statutory Code of Practice; giving parents of children who require extra help access to provisions for resolving disputes; introducing statutory co-ordinated support plans for children and young people who have additional support needs arising from complex or multiple factors which require a high degree of co-ordination of support with other agencies such as Health Boards; and giving parents access to new independent tribunals to consider issues relating to these plans.

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<sup>40</sup> <http://www.scotland.gov.uk/Topics/Education/Schools/HLivi>

4.5.2 The next major task is capitalising on the potential of new technology to support more effective learning and teaching through rolling out Glow<sup>41</sup> – a programme which will deliver a national intranet linking up all Scottish schools thereby providing a virtual learning environment throughout schools in Scotland. Learning and Teaching Scotland are leading on the implementation of this programme nationally.

#### **4.6 Tougher, intelligent accountability**

4.6.1 The Executive’s approach to ensuring a framework of rigorous but ‘intelligent’ accountability for schools is based on three key components:

- Provision of publicly available data on school provision and performance,
- systematic promotion of and support for self-evaluation at school and authority level; and
- independent, professional inspection

4.6.2 With regard to data, in addition to publishing basic data on the inputs and characteristics of the school system (teachers, pupils, class sizes, expenditure), the Executive publishes a range of data on performance at national and to a lesser extent local authority level. Since the late 1990s, there has been a deliberate move in government policy away from the publication of lists of school attainment data – which were typically converted by the press into school ‘league’ tables - to a combination of high level statistics and school level statistics placed within local context (and only accessible on a school-by-school basis) – through school level products such as the Parent Handbook and ‘Scottish Schools-on-Line’. Typically school level data for an individual school will be placed alongside some recent data for the school in question and local authority and national averages. At the primary and early secondary stages, the Scottish Executive also publishes a survey of national (and in some cases local authority level) patterns of attainment in some subject<sup>42</sup> areas (the Scottish Survey of Achievement), although again not at school level.

4.6.3 In addition to the national and local measures of attainment, Scotland participates in two international studies which test Primary and early Secondary namely PIRLS and TIMSS, and PISA which focuses on 15 year olds. These studies provide useful benchmarking of Scottish pupils within an international context.

4.6.4 With regard to self-evaluation, all publicly-funded schools are required to actively implement an approach in line with some broad national guidelines, supported by their local authorities. Each school evaluates its provision against a national set of quality indicators (developed from the inspection process and published in *How Good is Our School*) and reports back to their parents and local authorities (who address issues through Quality Improvement Officers). Local authorities also self-assess against a national set of quality indicators and also report publicly to their

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<sup>41</sup> <http://www.glowscotland.org.uk/index.asp>

<sup>42</sup> Currently surveys cover English language (2005), social subjects (enquiry skills) (2006), science (2007) and mathematics (2008). The core skills of literacy, numeracy, ICT, problem solving and working with others will also be assessed each year in these subject contexts.

stakeholders. Details on the School Improvement Framework are outlined at Annex D.

- 4.6.5 A key component of this self-evaluation process is the detailed material made available to individual schools, parents and local authorities. At primary school level an individual school and their local authority receive school level data on attendance and absence, levels of free school meals and characteristics of the school (teacher numbers, location, size etc). Material on exclusions, Pupil teacher ratios, Records of Needs are also provided as local authority and national averages. Parents receive a sub-section of this material. At secondary level in addition to the kind of material provided to primary schools, an array of attainment material is produced. Parents will receive school level attainment data at aggregate levels (ie percentage of pupils achieving 5 or more qualifications at SCQF<sup>43</sup> level 3 or better). Schools and local authorities also receive a wide range of detailed attainment analyses ranging from performance at subject level, trends over time, school level aggregations, and comparative performance measures within and between schools and national and local authority averages and trends. The specifics of these attainment analyses are developed in partnership between the Scottish Executive, local authorities, HMIE, SQA and schools. The material is collected from the range of data owners (schools, SQA and local authorities) via a data sharing partnership (the ScotXed partnership) and then following data quality checks and processing, it is made available back to all partners in a form suitable to their own business needs.
- 4.6.6 There is a long tradition of independent inspection (since the 1840s) undertaken by Her Majesty's Inspectorate of Education. Since the 1980s reports on the inspections of individual schools have been published and sent to parents (unusual in international terms). The current inspection cycle guarantees inspection of every individual school within a set period (7 years for primary, 6 for secondary) and greater focus – including enhanced follow-through – is given to poorly performing schools.
- 4.6.7 A more recent policy innovation in the field of inspection has been the inspection of the effectiveness of individual local education authorities in ensuring high quality educational provision in their areas. The first cycle (over a 5 year period) of such inspections has recently been completed and a second cycle is now underway. Reports of these inspections are also publicly released.

#### **4.7 Ambitious, Excellent Schools (AES) – monitoring overall progress**

- 4.7.1 A progress report on AES<sup>44</sup> (was published in February 2006, demonstrating that 39 of the 69 specific commitments made in November 2004 had been achieved, including establishing a new excellence standard for school inspections, revising the Standard for Headship, removing barriers between sectors, abolishing age and stage restrictions covering when students can sit exams and establishing an international benchmarking group with other European countries.

#### **4.8 Not in Education, Employment or Training (NEET)**

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<sup>43</sup> Scottish Credit and Qualifications Framework

<sup>44</sup> <http://www.scotland.gov.uk/Publications/2006/02/13143535/0>

4.8.1 The NEET strategy is part of the Scottish Executive's high profile commitment to identify and address the relatively (when considered internationally) high levels of 16 – 19 year olds who are not in Education, Employment or Training. The Strategy covers both the pre-16 (those below the compulsory school age) and those who have left the school system and are in various NEET outcomes – with the emphasis on negative outcomes such as inactivity and unemployment. At Pre – 16 the challenges identified by the NEET Strategy include.

- Providing flexible, personalised learning opportunities and developing employability
- Ensuring appropriate support for all learners regardless of abilities, needs and wider circumstances:
- Transforming the learning environment:
- Focus on outcomes:

4.8.2 At post 16 the high-level strategy is to focus on

- Guaranteeing options on leaving school:
- Losing no-one:
- Supported transitions and sustained opportunities:

#### **4.9 Chronology of Major Reforms<sup>45</sup> since 1999**

**1999** – Scottish Executive and Scottish Parliament created

**2000** – Standards in Scotland's Schools Act, including National Priorities in Education and the School Improvement Framework

**2001** – 'A Teaching Profession for the 21<sup>st</sup> Century' (McCrone agreement)

**2002** – National Debate on Future of Education in Scotland, Teacher Induction Scheme commences, Standard for Chartered Teachers published, new edition of HMIE's 'How good is our school?' published

**2003** – 'Education for Excellence' (Ministerial Response to National Debate) & 'Determined to Succeed' (Enterprise in Education strategy) published

**2004** – 'Ambitious, Excellent Schools' and 'A Curriculum for Excellence' published. Education Additional Support for Learning (Scotland) Act passed

**2005** – School-College review published, 'Review of Initial Teacher Education Stage 2: Report of the Review Group' published, 'Ambitious, Excellent Schools Standard for Headship<sup>46</sup>' published

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<sup>45</sup> Useful website for latest information on the Schools Sector

<http://www.scotland.gov.uk/Topics/Education/Schools>

<sup>46</sup> <http://www.scotland.gov.uk/Publications/2005/06/17104149/41536>

**2006** – NEET strategy (‘More Choices, More Chances<sup>47</sup>’) published; HMIE’s ‘How good is our school; The Journey to Excellence’ published

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<sup>47</sup> <http://www.scotland.gov.uk/Publications/2006/06/13100205/3>

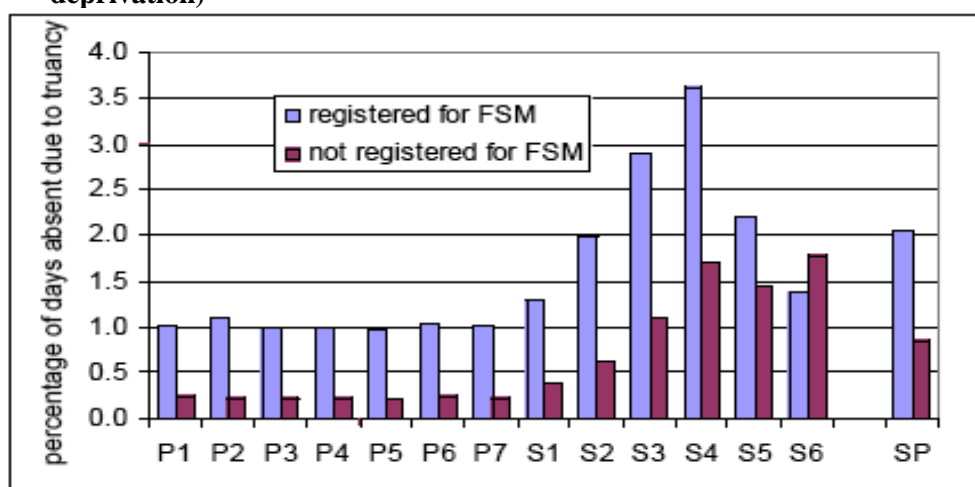
## Chapter 5: Performance of the System

- 5 This chapter aims to give an overview of the performance of the Scottish Education System. Material looking at Scotland’s performance relative to other OECD countries and benchmark countries is presented in a separate statistical booklet and attached for information as Annex J [OECD to update]

### 5.1 Attendance and Absence

- 5.1.1 One important aspect of the education system is the level of attendance. The latest figure shows that 93.1 percent of all possible attendance is taking place across Scottish schools<sup>48</sup>. The rate of attendance for primary schools was 95.0 percent, with the comparable figures for secondary schools being 90.4 percent. The rate for special schools was 90.7 percent. [rates are based on number of ½ days which were attended by all pupils, over the number of ½ days pupils could have attended]<sup>49</sup>
- 5.1.2 Attendance tends to be fairly stable between stages P1 and P7, and then decreases significantly through to S4, before increasing slightly in S5 and S6. Overall there is little difference in rates between boys and girls. However, boys do have noticeably better attendance rates from S3 to S6.
- 5.1.3 Levels of absence increase as pupils progress through the school system. Overall we know that just around 3.2 percent of school days are lost due to sickness, 0.7 percent lost to truancy and 0.5 percent lost to holidays being taken during term time.
- 5.1.4 A particularly important component of absence is ‘truancy’ – 10 percent of pupils account for 90 percent of truancy. There are clear and consistent links between the levels of truancy and socio-economic status. The following chart shows the links between free school meals (available to pupils whose parents are eligible for certain welfare benefits) and truancy across the stages in primary and secondary schools.

**Chart 10: Links between Truancy and Entitlement to Free School Meals (measure of deprivation)**



Source: Attendance and Absence in Scottish Schools – 2006 : Scottish Executive

<sup>48</sup> Primary, Secondary and Special – excluding S6 pupils

<sup>49</sup> Attendance and Absence in Scottish Schools – 2006 : Scottish Executive

## **5.2 Climate and behaviour in schools**

5.2.1 Within the classroom recent work<sup>50</sup> found that the classroom indiscipline encountered by teachers most frequently within a typical week were low-level, in particular, ‘talking out of turn’, ‘making unnecessary (non-verbal) noise’, ‘hindering or distracting others’ and ‘pupils leaving their seat without permission’. More serious indiscipline, such as physical violence or aggression, was far less likely to occur and was very rarely directed at teachers. These findings are very much in line with those of a similar independent study conducted in 2004

## **5.3 Attainment Background**

5.3.1 As described in Chapter 2, the Scottish school system is tested against and makes use of a range of attainment measures. At primary and early secondary these are typically against the 5 – 14 curriculum guidelines and international surveys. At the later stages in secondary, the main attainment structure is that provided by National Qualifications. In addition Scotland’s 15 year olds also participate in PISA. This survey provides an important benchmark against which to judge the strengths and weaknesses of the Scottish system as measured by the performance of pupils reaching the end of compulsory education.

### **5.3.2 The Scottish Survey of Achievement**

5.3.2.1 The Scottish Survey of Achievement<sup>51</sup> provides data on pupil achievement across the primary and early secondary stages. The latest available data comes from the 2005 survey and shows that we have strong performance in early and mid primary, with around 75 percent of pupils in P3 and P5 well established at or better than expected levels in reading and numeracy. At P7 (end of Primary) almost 50 percent of pupils are well established or better than expected levels in reading with almost 70 percent at this standard in numeracy. In S2 (early secondary) around 50 percent of pupils are well established or better than expected level in reading and numeracy. We also know that many pupils across Primary and early secondary are performing above (and in some cases – well above) expected levels.

### **5.3.3 Attainment in National Qualifications<sup>52</sup>**

5.3.3.1 Whilst a few pupils may be presented for National Qualifications (NQs) in S3 all pupils are normally expected to have been presented for their first formal qualifications by the end of S4 (aged around 16). This normally consists of being presented for NQs at various levels in around 8 subjects. For those that stay on this is followed typically by further presentations for other National Qualifications in S5 and again in S6.

5.3.3.2 When measured at the end of S4, the overall trend in the quantity and quality of examination results achieved by Scottish pupils presented for National Qualifications

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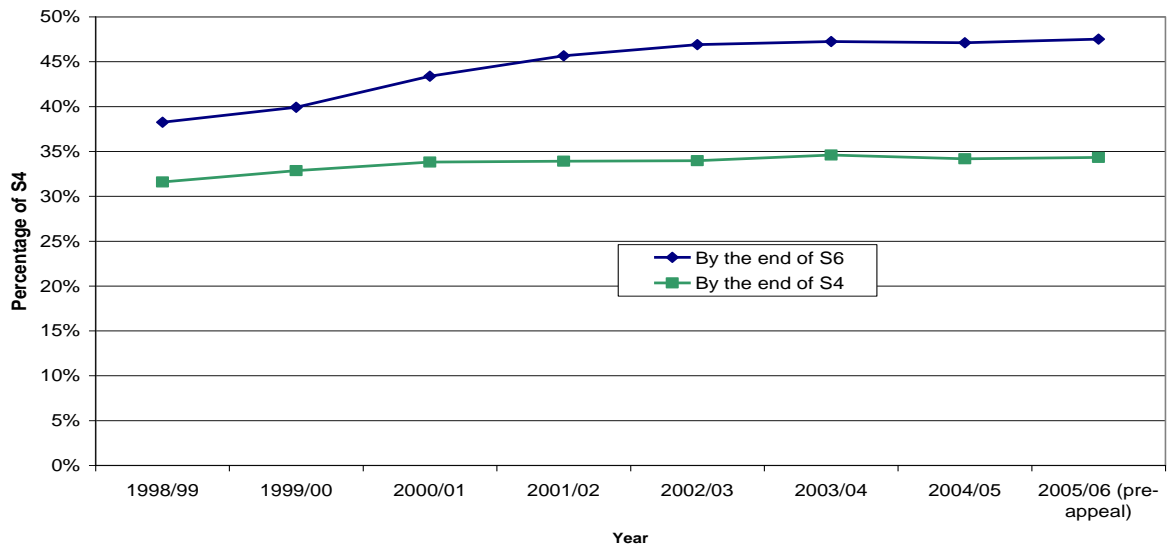
<sup>50</sup> Behaviour in Scottish Schools - October 2006 : Scottish Executive

<sup>51</sup> <http://www.scotland.gov.uk/Resource/Doc/132796/0031661.pdf>

<sup>52</sup> Details on National Qualifications can be found at <http://www.sqa.org.uk/sqa/14096.html>

has tended to be relatively flat over recent years. Significant increases are evident, however, if analysis is focused on pupils' achievements by the end of S6, particularly with regard to a significant reduction in the proportion of pupils who have not achieved at least 5 awards at SCQF<sup>53</sup> level 5 by that stage.

**Chart 11: Pupils gaining 5+ awards at SCQF level 5 (Standard grade credit or Intermediate 2)**

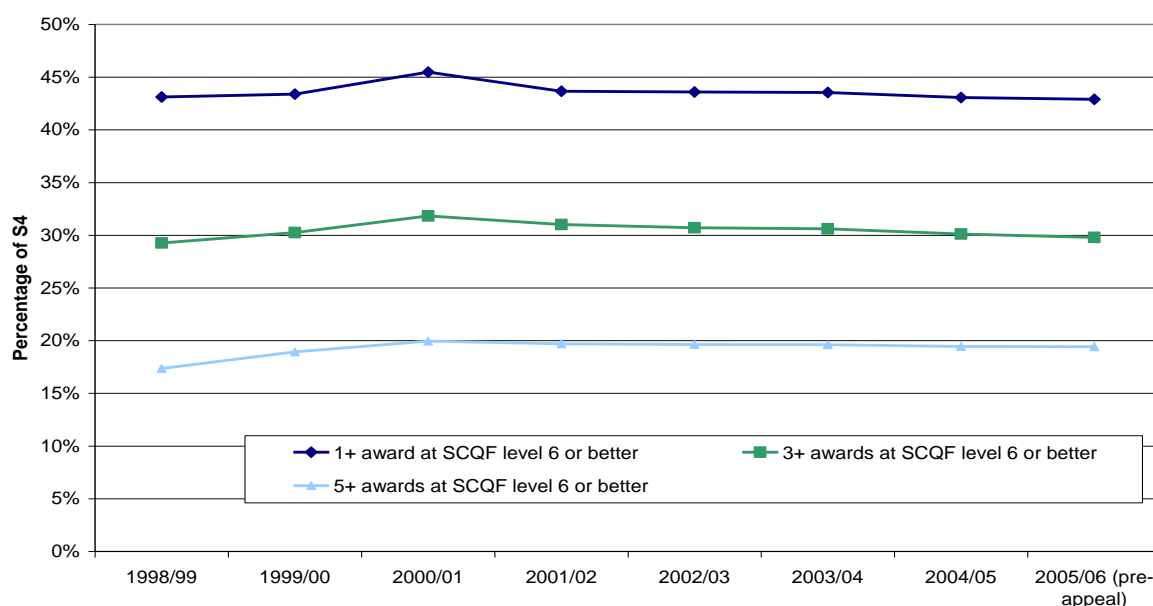


5.3.3.3 Looking at the performance at SCQF level 6 (Highers) the evidence is that levels of attainment have remained steady over the last few years.

<sup>53</sup> <http://www.scqf.org.uk/>



**Chart 12: Pupils gaining awards at SCQF level 6 (Higher)**



5.3.3.4 At the lower end of the attainment spectrum, more than nine out of ten pupils gain a Standard Grade (or equivalent) in both English and Maths. Around 4 percent of pupils leave publicly funded secondary school with no NQ (National Qualifications) qualifications at Standard Grade (or equivalent)<sup>54</sup>

## 5.4 Closing the Opportunity Gap and Not in Education, Employment or Training

5.4.1 Improving educational and employment outcomes for those young people who leave school with relatively low levels of attainment and engagement with the educational process is a strong priority within current Scottish policy. In this context there is a continuing strong focus on trying to break the link between social/economic disadvantage and under-achievement. There are various policy interventions in place which are attempting to address these complicated and long standing problems. These include the focus on the lowest attaining 20 percent of pupils and the ‘Closing the Gap’ initiative (Annex E) and as pupils move beyond school, it follows through into the Executive’s recently published NEET strategy (Not in Education, Employment or Training), which aims to reduce Scotland’s comparatively high levels of young people falling into that category in early adult life.

### 5.4.2 Closing the Opportunity Gap

5.4.2.1 There is a range of evidence on the performance of the lower attaining pupils in the Scottish education system. International evidence from PISA shows that the gap between the higher and lower performers in maths is the lowest – alongside Finland – of OECD countries. In reading literacy, Scotland performance is better than the OECD average, but the gap is significantly larger than that found in Finland,

<sup>54</sup> This does not include pupils' achievements in individual National Qualifications units and non-SQA accredited courses and it does not include achievements of pupils in special schools.

Australia, Korea and Canada. Within the subject area of scientific literacy the gap between higher and lower performing pupils in Scotland's performance is around the OECD average.

5.4.2.2 Focusing on the performance of the lowest attainers, the percentage of Scottish students performing at or below Level 1 in PISA 2003 in mathematics is well below the OECD average and compares favourably with a number of competitor countries. Only Finland, Korea and the Netherlands are shown to perform significantly better than Scotland at this level. Looking at those performing below Level 1, only 2.8 percent of Scottish students fall into this category compared to a country mean of 8.2 percent across OECD countries.

5.4.2.3 In reading, Scotland's performance at the lower end of attainment has improved between 2000 and 2003 with the percentage of students at or below Level 1 falling to 10.8 percent in 2003 compared to 12.3 percent in 2000 while many other high performing countries have remained unchanged or their performance has deteriorated since PISA 2000.

5.4.2.4 However within Scotland there continues to be concern about the performance of pupils at the low end of the attainment spectrum. Recent evidence shows that attainment (as measured by the National Qualifications examination system) of the lowest 20 percent is actually flat at a time when increases are being seen at the top end of the spectrum. Looking at the links between deprivation and low attainment at S4, we know that of the lowest 20 percent attainers across the country, substantially more live in deprived areas than live in the least deprived areas – over 40 percent of pupils living in the most deprived 5 percent of Scotland are in the lower attaining 20 percent group, compared with only 4 percent of the pupils living in the least deprived areas of Scotland. Looking at cohort groups we also know that females slightly outperform males, that pupils in urban Scotland have lower attainment than other areas (links to area deprivation), that pupils who receive free school meals (a proxy for individual income deprivation) have much lower levels of attainment than those pupils not registered for free school meals, and children who are looked after perform on average worse than any other cohort of pupils.

### 5.4.3 **Not in Education, Training or Employment (NEET)**

5.4.3.1 Across Scotland the number of 16 – 19 year olds in NEET has remained fairly stable at between 1 in 7 and 1 in 8 of the cohort. The position relative to other countries places Scotland at the high end of the level of NEET with latest figures from OECD putting only Turkey and Mexico in a worse position to that in Scotland. The picture is however complicated by the impact of different minimum school leaving ages. Latest data from benefits data and school leaver destinations suggests that the level of NEET in Scotland is declining slightly.

5.4.3.2 Across Scotland there are variations by gender, deprivation and geography. The Scottish Executive has identified seven target areas – Glasgow, Dundee, North Ayrshire, East Ayrshire, West Dunbartonshire, Clackmannanshire and Inverclyde as

having a particular problem with NEET, although all local authorities have been tasked to implement plans to reduce NEET.

5.4.3.3 We know that young adults in NEET are more likely than the non-NEET group to have low qualifications, and that those in NEET have higher instances of truancy, exclusions and likelihood of becoming a lone parent. The type of NEET also varies by gender and socio-economic background. Of the estimated 36 thousand young adults in NEET, we estimate that around 20 thousand require support (the remaining move into employment or training following ‘gap’ years or simply taking time to identify their options before achieving a positive outcome). It is clear that NEET males are more likely to be unemployed than females, that levels of economic inactivity are higher amongst females and that inactive people tend to remain within this group for longer than those who are unemployed

5.4.3.4 Other snapshot information about the group is that

- 37 percent have low level qualifications (below SVQ<sup>55</sup> level 2), including 28 percent who have no qualifications;
- 39 percent of the NEET group have never worked;
- 14 percent of NEET suffer from Limiting Long Term Illness.

5.4.3.5 It is clear that those in NEET have a range of characteristics and of the estimated 36,000 people (aged 16 – 19) in NEET - from the Labour Force Survey – there is considerable churn in the individuals flowing in and out of NEET status over time.

The key priorities are

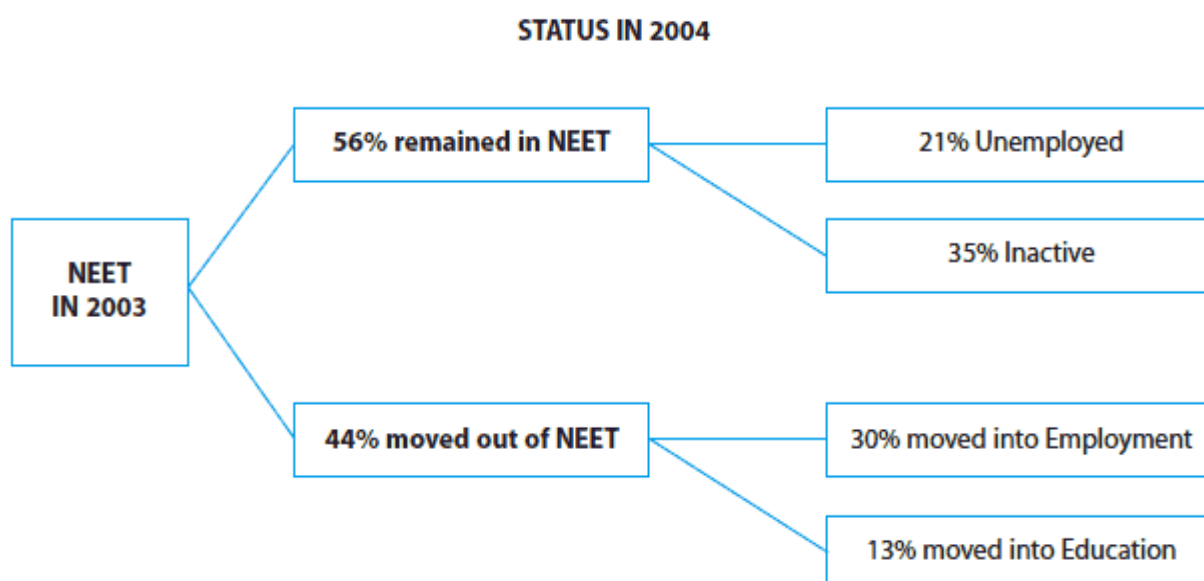
- sustained NEET status over an extended period (with 3 months commonly cited as significant); or
- frequent repetition of NEET status between short, episodic spells of labour market engagement.

5.4.3.6 The main flows are broadly set out in Chart 13, using data from 2003 and 2004.

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<sup>55</sup> Scottish Vocational Qualifications – see Annex F

**Chart 13: Flows in NEET**



5.4.3.7 This shows that:

- of those that were NEET in 2003, 56 percent remained NEET and 44 percent moved on to employment or full-time education;
- of those that remained NEET, a larger proportion were inactive.

5.4.3.8 The key messages of the NEET challenge are:

- A dynamic group: whilst the number of 16-19 year olds NEET remains broadly static, many of the actual individuals within the group are changing at a rapid rate;
- But with a core cohort who do not change over time: persistent long term NEET status is a problem for a significant number of young people;
- And a profile which suggests inactivity is a more pronounced feature of long term NEET than unemployment: with 70 percent of those 16-19 year olds claiming inactive benefits doing so for over 6 months, whereas approximately 13 percent of 16-19 year olds who are registered unemployed remaining so for over 6 months.

5.4.3.9 Linking NEET and Closing the Opportunity Gap is information on the destinations taken by school leavers. Evidence shows that young people from deprived areas are much less likely to enter Higher Education and much more likely to enter Training, Further Education or Unemployed (and seeking work) categories. Across Scotland we know that young adults in the three Island authorities (Shetland, Orkney and Western Isles) have the lowest levels of NEET destinations and that staying-on-rates (beyond the minimum school leaving age) are around 25 percent points higher in areas such as East Renfrewshire and Argyll and Bute than they are in Glasgow, Midlothian and Dundee.

5.4.3.10 Evidence on social segregation in Scotland schools, as measured by comparing the distribution of social backgrounds in schools (using the occupations of parents) with the distribution in the whole population, is that it is at one of the lowest in the OECD.

## **5.5 Overview of findings from the inspection process**

5.5.1 In 2006 HMIE published their most recent high-level report which incorporated a view of strengths and weaknesses across all sectors from pre-school to Further Education Colleges and informal adult education, *Improving Scottish Education*. A summary of key messages from this report follows.

### **Summary of current state of Scottish Education System (Her Majesty's Inspectorate of Education – Improving Scottish Education Report<sup>56</sup>)**

#### **Pre-School Sector: Key strengths**

- good relationships between pre-school staff and parents
- commitment of staff and growing number with qualifications
- use of learning environment to promote purposeful play and independent learning in many centres
- range of learning opportunities available to children
- good progress across areas of learning and development
- secure, confident and motivated children.

#### **Pre-Schools Sector: Aspects for improvement**

- quality of leadership (particularly in the private and voluntary sectors)
- quality of learning, particularly through effective interaction with children and addressing individuals' learning needs.

#### **Primary Sector: Key strengths**

- well-motivated pupils
- quality of pastoral care
- supportive climate for learning
- broad curriculum
- skilled teaching staff
- contribution of support staff

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<sup>56</sup> <http://www.hmie.gov.uk/ise/default.asp>

- attainment of pupils in P1–P4
- high stakeholder satisfaction.

### **Primary Sector: Aspects for improvement**

- quality and consistency of pupils' learning
- pupils' achievements, particularly at P6/P7 and lower-attaining pupils.
- Strategic leadership with a clear focus on learning and teaching is required, and all staff need to accept a leadership role in building capacity to meet all learners' needs

### **Secondary Sector: Key strengths**

- pupils' performances by international standards
- high level of pastoral care and ethos
- skilled subject teachers
- positive impact of many headteachers
- stakeholders' broad satisfaction with provision

### **Secondary Sector: Aspects for improvement**

- learning, its quality and consistency and level of challenge to individuals
- achievement, particularly at S1/S2, performance of boys, lower-attaining pupils, levels of self-confidence and personal contribution to the community
- leadership, with greater ownership of responsibility for improvement, increased accountability and the promotion of leadership at all levels.

### **Special Schools Sector: Key strengths**

- parents' satisfaction;
- pupils' achievements in personal and social development
- commitment of teachers and support staff
- quality of pastoral care in most schools
- strength of partnerships with parents in most schools
- positive climate for learning in most schools.

### **Special Schools Sector: Aspects for improvement**

- leadership, particularly in learning and through self-evaluation
- learning and achievement, with issues around the length of the school week in some schools, imaginative learning contexts, learning collaboratively, learning through ICT and at home
- partnership working with authorities in the case of residential special schools and secure accommodation.

## **Annex A – Schools of Ambition**

1. The Schools of Ambition (SoA) programme was introduced in 2005 with the first 20 schools accepted onto the programme in June that year. The SoA programme aims to support schools to transform educational outcomes. It seeks to raise the ambitions of schools, instil belief and ambition in pupils, extend their opportunities and transform their life chances. The main focus of the programme is secondary schools, sometimes in conjunction with associated primary and specialist schools. These include schools most in need of transformation – very often those contending with the most challenging local circumstances – and schools that have strong ideas for transformation and can set new national standards of excellence.
2. Each school will use opportunities for curriculum flexibility to design learning experiences that are visibly relevant for pupils. Schools may develop areas of curricular excellence and will celebrate with their students their successes and achievements. They will be expected to share what they learn from involvement in the programme with other local schools and more widely.
3. A core aim of the programme will be to capitalise on the different perspectives and expertise of parents, voluntary organisations, other professions, local sporting figures, artists and performers, local businesses and philanthropists. Such new partners will also help schools tap into new networks of support and leadership.
4. The programme provides additional funding by the Scottish Executive - each school will receive at least £100,000 per annum for three years, depending on the school roll and the scope of the plans submitted - with additional support from business partners. Schools will have access to external expertise on issues such as change management and educational good practice. A further 7 schools joined the programme in April 2006. Additional schools will be accepted onto the programme as part of a rolling programme; it is thought that 42 schools or combination of schools will be on the programme by the end of 2006.

## **Annex B - Skills for Work Pilot Courses & Determined to Succeed (Enterprise in Education Strategy)**

### **Skills for Work Pilot Courses**

1. Following consultation on vocational aspects of the new 3-18 curriculum, new skills-for-work pilot courses are being developed to enable young people age 14-16 to undertake vocational learning in VET institutions as part of the school-based curriculum. 'A Curriculum for Excellence' (2004) includes the commitment to deliver a new course and qualification in learning about Skills for Work for 14-16 year olds by 2007. 5 Courses in 4 subject areas have been developed for piloting in 2005-06. These are:

- Construction Craft – Intermediate 1
- Early Education and Childcare – Intermediate 1 & 2
- Financial Services – Intermediate 2
- Sport & Recreation – Intermediate 1

For piloting in 2006-07, additional courses are being developed in:

- Construction Craft – Intermediate 2
- Sport & Recreation – Intermediate 2
- Rural Skills – Intermediate 1
- Hairdressing – Intermediate 1
- Practical Experiences: Construction & Engineering – Access 3

2. The programme will be rolled out from 2007-08, with additional courses added in subject areas where there is shown to be a need. These courses will be predominantly delivered through school-college partnerships and funded by the Scottish Funding Council and/or local authority's 'Determined to Succeed' (Enterprise in Education – see below) budgets.

### **Determined to Succeed (Enterprise in Education Strategy)**

3. The Scottish Executive launched its new strategy for Enterprise in Education – Determined to Succeed (DtS) – in March 2003. DtS evolved from the recent review of enterprise in education and calls for a change in the way pupils learn, teachers teach and the way the education and business communities interact. It is all about developing in young people the skills, knowledge and attitudes that prepare them for the world of work, and for life more generally. It focuses on providing for pupils from P1 to S6 three key areas of activity – enterprising and entrepreneurial education and work-based vocational learning with a relevant qualification for pupils aged 14 and over.

4. Local authorities are responsible for delivering Enterprise in Education in their own areas: the Scottish Executive has committed £42 million over 3 years (2003-2006) to implementing this strategy and the private sector has contributed a further £2 million to support specific activity.



## Annex C - A Curriculum for Excellence

1. The curriculum review, *A Curriculum for Excellence*, had its origins in the National Debate on Education in 2002. The Debate showed people thought there were many strengths in the Scottish education system but thought, among other reforms, that the curriculum was overcrowded, there should be a single curriculum for children and young people from the ages of 3 to 18, we should have a better balance between 'academic' and 'vocational' subjects and to equip young people with the skills they will need in tomorrow's workforce. The Curriculum Review Group published its recommendations for a new curriculum in November 2004 along with the Ministerial Response. It looked at the purposes of education and said that education should provide children and young people the opportunities to develop as successful learners, confident individuals, responsible citizens and effective contributors. The principles for curriculum design include challenge and enjoyment for children and young people, breadth, progression, depth, personalisation and choice, coherence and relevance in their learning.

2. The Curriculum Review Programme Board published its *Progress and Proposals* report in March 2006 which showed a broader view of the curriculum, to include the ethos and life of the school as a community, how learning is organised, the importance of inter-disciplinary projects and subjects to help make learning relevant for young people and began looking at the opportunities for recognising young people's personal achievements within and outwith school. We published online on 3 November *Building the Curriculum 1* which provides information on how the curriculum areas will contribute to young people's learning.

3. The implementation of A Curriculum for Excellence goes beyond the provision of guidance on curriculum content. The changes in learning and teaching will have implications for the teaching profession, the organisation of the curriculum in our schools, the qualifications system, the recognition of wider achievement, and the improvement framework. We will discuss emerging ideas in these, and other, areas with the profession, employers, further and higher education providers and others over the coming months, and a package of proposals covering a number of these issues will be published over the coming months.

## **Annex D – School Improvement Framework**

1. The School Improvement Framework promotes and supports delivery of improvement in education against the backdrop of the National Priorities in Education. The long term strategic direction for improvement in Scotland’s schools is set out in the National Priorities in Education which ensure that improvement is not recognised merely through academic attainment, but encompasses the whole needs of the young person and the whole life of the school.

2. The Standards in Scotland’s Schools etc. Act 2000 introduced the school improvement framework, an integral part of which is the National Priorities in Education. The Act places a duty on Ministers and local authorities to ‘secure improvement in the quality of school education.’ It also required Ministers to define measures of performance in respect of the NPs. Local authorities are in turn required to set improvement objectives against these measures and monitor progress, publishing the results in annual *Statements of Education Improvement Objectives* and likewise, annual *Progress Reports*.

3. The framework is designed to encourage local implementation and accountability, and many duties for monitoring progress lie with the authorities and Her Majesty’s Inspectorate of Education (HMIE). Under the Act, Ministers do have a duty ‘to endeavour to secure improvement in the quality of school education’.

4. Ongoing support for improvement will be rolled out through GLOW and via HMIE’s ‘Journey to Excellence’, managed on SEED’s behalf by Learning & Teaching Scotland, in partnership with HMIE.

5. The school improvement framework concerns securing improvement in school education for everyone and respective local accountability. The 5 National Priorities provide a national vision, but the local flexibility and focus within the framework remains key to its success. National Priorities provide a focus on key outcomes in school education. These allow for local flexibility in delivery, so that local needs can be reflected.

## **Annex E - Closing the Opportunity Gap**

### **Introduction**

1. Since devolution in 1999, The Scottish Executive has been committed to tackling poverty and disadvantage. From 1999 to 2004, this was done through the Social Justice Strategy. From 2004, the decision was made to focus on tackling the most important issues in order to overcome poverty in Scotland.

### **Aims**

2. The Partnership Agreement (Partnership for a Better Scotland) committed the Scottish Executive to Closing the Opportunity Gap. Working across all Departments and portfolios the aim is:

- To prevent individuals or families from falling into poverty;
- To provide routes out of poverty for individuals and families; and
- To sustain individuals or families in a lifestyle free from poverty.

### **Objectives**

3. Six Closing the Opportunity Gap objectives were launched on July 12, 2004:

- To increase the chances of sustained employment for vulnerable and disadvantaged groups - in order to lift them permanently out of poverty
- To improve the confidence and skills of the most disadvantaged children and young people - in order to provide them with the greatest chance of avoiding poverty when they leave school;
- To reduce the vulnerability of low income families to financial exclusion and multiple debts - in order to prevent them becoming over-indebted and/or to lift them out of poverty;
- To regenerate the most disadvantaged neighbourhoods - in order that people living there can take advantage of job opportunities and improve their quality of life;
- To increase the rate of improvement of the health status of people living in the most deprived communities - in order to improve their quality of life, including their employability prospects; and
- To improve access to high quality services for the most disadvantaged groups and individuals in rural communities - in order to improve their quality of life and enhance their access to opportunity.

### **Targets**

4. The six objectives are underpinned by 10 targets - announced on 9th December 2004. These targets build on the progress made in the Social Justice Strategy and identify the key areas where greater improvement is needed. Targets relating to education and the Executive's NEET strategy are:

Target B: Reduce the proportion of 16-19 year olds who are not in education training or employment by 2008.

Target E: By 2008, ensure that children and young people who need it have an integrated package of appropriate health, care and education support.

Target F: Increase the average tariff score of the lowest attaining 20 per cent of S4 pupils by 5 percent by 2008

Target G: By 2007 ensure that at least 50 percent of all "looked after" young people leaving care have entered education, employment or training.

## Annex F

### **Terms of Reference for the OECD Review of the Quality and Equity of Education Outcomes in Scotland**

#### The National Policy Context

On 1 July 1999 a new Parliament and Executive were established in Scotland with legislative and executive responsibility respectively for a wide range of matters devolved from the UK Government, including education, training and lifelong learning. Scotland remains a full part of the United Kingdom and reserved matters e.g. foreign policy, defence, UK fiscal, economic and monetary matters continue to be governed at a UK level.

The First Minister for Scotland is responsible to the Scottish Parliament for the overall supervision and development of the education system in Scotland and for legislation affecting Scottish education, through The Scottish Executive Education Department (SEED) and Scottish Executive Enterprise, Transport & Lifelong Learning Department (SEETLLD). In practice, the First Minister delegates responsibility to the Minister (and Deputy Minister) for Education & Young People and the Minister (and Deputy Minister) for Enterprise & Lifelong Learning.

SEED has responsibility for pre-school and compulsory and post-compulsory school education. It broadly determines national aims and standards, formulates national policy, commissions policy-related research and analysis, provides a national programme of inspection, issues guidelines on curriculum and assessment and oversees teacher training and supply. SEETLLD has responsibility for post-school education, including lifelong learning, further and higher education, skills, employability and training.

Five National Priorities were approved by the Scottish Parliament in December 2000 under the Standards in Scotland's Schools etc Act. These were an expression of the high level priorities for the partnership government and have directed education policy developments since then. The 5 Priorities are:

- Achievement and Attainment
- Framework for Learning
- Inclusion and Equality
- Values and Citizenship
- Learning for Life

In November 2004 SEED published *Ambitious, Excellent Schools*<sup>57</sup>, its agenda for action to modernise many aspects of Scottish education in pursuit of the broad aims of heightened expectations, stronger leadership and ambition; more freedom for teachers and schools; greater choice and opportunity for pupils; better support for learning; and tougher, more intelligent accountabilities. *Ambitious, Excellent Schools* contained 69 separate commitments under these

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<sup>57</sup> Available at <http://www.scotland.gov.uk/Publications/2004/11/20176/45852>

five broad headings. By November 2005, a Progress Report<sup>58</sup> demonstrated that 39 of these had been achieved and work is currently taking place to achieve the remaining commitments.

An important element of *Ambitious, Excellent Schools* is the wide-ranging programme of work being taken forward under the title *A Curriculum for Excellence*. This programme of work is designed to produce a curriculum framework which will enable all young people from 3-18 to develop capacities as successful learners, confident individuals, responsible citizens and effective contributors. The Programme represents a major move towards an outcome-based curriculum. It will impact on all aspects of school education, including the design of the curriculum itself; teachers' development; elements of the qualifications structure; assessment methodologies; school and authority improvement planning; inspection; school buildings policy; linkages with the Further Education sector; preparing young people to enter education employment and training; and leadership, management and ethos within schools.

Key Ministerial priorities currently centre around implementing *A Curriculum for Excellence*; reforming assessment, including greater recognition of wider achievement; developing excellence within the teaching profession; improving leadership; breaking the link between deprivation and low achievement and attainment; attainment of looked after children; raising attainment and achievement and tackling the NEET<sup>59</sup> issue – in short, providing the right educational environment and opportunities to achieve maximum potential for all learners, practitioners and leaders within the education system.

### Purpose of Review

The economic, cultural, and social dimensions of globalisation and the emergence of the knowledge society intensify the pressure on governments and education systems everywhere to improve their quality, efficiency and equity.

Scotland performed well in both PISA 2000 and 2003, being ranked in the top third of OECD nations in all three literacies, and the system consistently delivers positive outcomes for a large majority of young people. The 2005 *Scottish Survey of Achievement*<sup>60</sup> indicated that over 75 percent of Primary 3 (age 7) and Primary 5 (age 9) pupils were well established or better at the levels expected of them in reading and numeracy. At P7 (age 11) and Secondary 2 (age 13) around 50 percent of pupils were well established or better at their expected levels. Additionally, half of school leavers went on to full time Further or Higher Education in 2004/05.

In order to increase further the competitiveness and standing of its education system in the increasingly demanding European and global environment, and in line with the commitment made in *Ambitious, Excellent Schools* (2004) to benchmark Scotland against international standards as a basis for bringing about further improvement in performance, the Scottish Executive has asked the OECD to undertake a review of education in Scotland. The review will compare the performance of Scottish education to that of other OECD countries in order to assess its strengths and challenges, and to explore approaches which might add to our agenda in overcoming such

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<sup>58</sup> [Ambitious Excellent Schools Progress Report 2006](#)

<sup>59</sup> Young People aged 16-19 Not in Education, Employment or Training

<sup>60</sup> <http://www.scotland.gov.uk/Publications/2006/06/23121326/0>

challenges, and further reinforce strengths and improve performance. The increasing availability of internationally comparable data has provided additional impetus and means for doing so.

The Scottish Executive's key objectives for the review are:

- To invite the OECD to carry out a review of the quality and equity of education outcomes in Scotland.
- To structure the review in a way which integrates lessons from PISA and other benchmarking countries/regions with an expert analysis of key aspects of education policy in Scotland.
- To invite the OECD, on the basis of their analysis, to highlight areas of policy and levers which might add further value to our agenda of improving education outcomes for young people in Scotland.

### Scope

Focusing principally on school education and the important transitions to and from this, it is intended to provide insights, informed by experience in other countries, into possible explanations for the observed outcomes; and to highlight policy directions that reflect international experience and good practice.

More particularly, the review will address key areas such as consistency of education outcomes across the country; equity of outcomes for young people from differing social backgrounds and personal circumstances e.g. looked after children, young people with additional support needs; and performance of the lowest attaining young people relative to other learners. It will also look at issues such as leadership, disengagement from learning and transitions across sectors, and consider where the key levers for positive change are in order to ensure that all young people are able to achieve their full potential.

### Specific Questions to be Addressed

1. Viewed from an international perspective, what are the strengths and weaknesses of education in Scotland, particularly with reference to those who are not achieving their full potential, including those at risk of becoming part of the NEET group.
2. Do the range of current reforms, including specifically work in progress on the wider agenda of *A Curriculum for Excellence*, address the challenges sufficiently? How well do the reforms compare with reforms in countries which have common issues to deal with? How effective have implementation policies, particularly in respect of outcome-based curriculum reforms, been in comparator nations?
3. Are there international insights in the delivery of education to young people at risk of underachieving from which Scotland might draw? If so, what appear to be the principal benefits and advantages of these approaches to Scotland? And what are the most plausible strategies to deploy in a manner that respects the culture, values, and traditions of Scottish education?

4. How well do current reforms disseminate to the classroom and is there evidence that their impact will be sustainable over the longer term? How effective are they at changing behaviour on the ground? Are the key messages being communicated effectively and getting through the system?

### Process

The OECD will use their customary format of ‘peer review’, carried out within the framework of reviews of national policies for education. This has been the mainstay of OECD comparative analysis work on education systems, utilising PISA results as a valuable tool in this respect which permits the analysis of performance outcomes. The review will combine a qualitative, expert-based approach with the quantitative analyses permitted through PISA data.

### Comparator Countries & Experts

The following four experts, all internationally renowned in their respective fields and areas of specialist knowledge, have been approached to carry out the review. The review will draw more detailed comparisons with the experts’ countries, based on their knowledge and experience, while taking into account social and cultural differences:

- Simo Juva, Finland – principally for high performance and high equity education outcomes;
- Frances Kelly, New Zealand – multiple areas;
- Dirk van Damm, Flanders – principally for tackling NEET & for Vocational Education & Training approaches; and
- Richard Teese, (Victoria) Australia – principally for curricular reform and VET/equity, rapporteur for group.

### Schedule

Agree terms of reference	- end November 2006
Agree scope and structure of background report	- end November 2006
Complete background report	- end February 2007
Visit by examiners	- March 2007
Draft report	- end September 2007
Special Session of OECD Education Committee	- early December 2007
Publication of final report	- early 2008



## Annex G

### Scottish Credit and Qualifications Framework

SCQF level	SQA National Units, Courses and Group Awards	Higher Education	Scottish Vocational Qualifications
12		Doctorates	
11		Masters	SVQ 5
10		Honours Degree Graduate Diploma/Certificate*	
9		Ordinary Degree Graduate Diploma/Certificate*	
8		Higher National Diploma Diploma in Higher Education	SVQ 4
7	Advanced Higher	Higher National Certificate Certificate in Higher Education	
6	Higher		SVQ 3
5	Intermediate 2 Credit Standard Grade		SVQ 2
4	Intermediate 1 General Standard Grade		SVQ 1
3	Access 3 Foundation Standard Grade		
2	Access 2		
1	Access 1		

\* These qualifications are differentiated by volume of outcomes and may be offered at either level

## Annex H

### Overview of Progression through the Scottish Education System

Age	Institutions	Examinations / Surveys	Qualifications achieved by pupils	Quality Assurance
0 – 5 (optional – free 2.5 days per week for 3 and 4 year olds)	Pre-school education centres. Mixture of private, public and voluntary sectors	None	None	Joint HMIE and Care Commission inspections
5 – 12 (compulsory)	Primary Schools – vast majority in public sector. No selection criteria in public sector	No formal external examinations, but a range of local authority and national assessment tools, including  i) 5 – 14 National Assessment ii) Scottish Survey of Achievement iii) PIRLS and TIMSS	5 – 14 National Assessment levels (internally assessed by schools).	HMIE Inspections
12 – 16 (compulsory)	Secondary Schools – vast majority in public sector. No selection criteria within public sector which are comprehensive and co-educational.	Early Secondary (12 – 14 ): i) 5 – 14 National Assessment ii) Scottish Survey of Achievement iii) TIMSS and PISA Later Secondary (14 – 16 ) : i) National Qualifications (assessed by SQA) ii) Vocational Qualifications	National Qualifications :  Units and Courses at <ul style="list-style-type: none"> <li>▪ Access</li> <li>▪ Intermediate</li> <li>▪ Standard Grade</li> <li>▪ Highers</li> <li>▪ Advanced Highers</li> </ul>	HMIE Inspections
16 – 18 (optional)	Secondary Schools, Further Education Colleges. No formal entrance requirements, although individual courses may require specific prior achievements	Mixture of National Qualification, Vocational Qualifications.	National Qualifications :  Units and Courses at <ul style="list-style-type: none"> <li>▪ Access</li> <li>▪ Intermediate</li> <li>▪ Standard Grade</li> <li>▪ Highers</li> <li>▪ Advanced Highers</li> </ul> Scottish Vocational Qualifications	HMIE inspections

## Annex I

### Useful Internet Links by Sector

#### 1. Pre-School Sector

i) Inspection:

HMIE [www.hmie.gov.uk](http://www.hmie.gov.uk)

Care Commission [www.carecommission.com](http://www.carecommission.com)

ii) Guidance:

National Care Standards for Early Education and Childcare up to the age of 16

<http://www.scotland.gov.uk/Publications/2005/04/12103332/33329>

The Child at the Centre

<http://www.scotland.gov.uk/Publications/2000/02/7277/File-1>

iii) Curriculum (3- 5 year olds)

<http://www.scotland.gov.uk/Topics/Education/Schools/curriculum/3to5>

#### 2. Primary School [5 – 12 years of age]

i) Inspection:

HMIE [www.hmie.gov.uk](http://www.hmie.gov.uk)

ii) Guidance:

National Guidelines 5 – 14 curriculum

<http://www.ltscotland.org.uk/5to14/guidelines/>

<http://www.scotland.gov.uk/Topics/Education/Schools/curriculum/5to14/Q/forceupdate/on>

iii) Assessment 5 – 14

<http://www.scotland.gov.uk/Topics/Education/Schools/curriculum/5to14ass/Q/forceupdate/on>

<http://www.scotland.gov.uk/Topics/Education/Schools/curriculum/Attainment>

Scottish Survey of Achievement:

<http://www.scotland.gov.uk/Publications/2005/09/20105646/56474>

### **3. Secondary School [12 – 16 years of age]**

i) Inspection

HMIE [www.hmie.gov.uk](http://www.hmie.gov.uk)

ii) Curriculum (Post 14)

<http://www.scotland.gov.uk/Topics/Education/Schools/curriculum/post14/Q/forceupdate/on>

iii) Assessment

<http://www.scotland.gov.uk/Topics/Education/Schools/curriculum/Attainment>

### **4. Post School [16 – 18 years of age]**

i) Further Education

<http://www.scotland.gov.uk/Topics/Education/UniversitiesColleges/17135/7551>

### **Overview Information Sites:**

i) Scottish Executive - Schools

<http://www.scotland.gov.uk/Topics/Education/Schools>

ii) Scottish Executive - Post School Transitions

<http://www.scotland.gov.uk/Topics/Education/Life-Long-Learning/16581/21600>

iii) Learning Teaching Scotland (main organisation for the development and support of the Scottish curriculum)

<http://www.ltscotland.org.uk/index.asp>

iv) Her Majesty's Inspectorate of Education

[www.hmie.gov.uk](http://www.hmie.gov.uk)

v) Scottish Qualifications Authority

[http://www.sqa.org.uk/sqa/CCC\\_FirstPage.jsp](http://www.sqa.org.uk/sqa/CCC_FirstPage.jsp)

## ANNEX J

### PERFORMANCE OF 15 YEAR OLD STUDENTS IN SCOTLAND: RESULTS FROM PISA 2003

The OECD's programme for international student assessment (PISA) measures the competencies of fifteen-year old students in the areas of reading, mathematics and science. In 2003, all OECD countries and 11 partner countries participated in the study, which focussed on the assessment of mathematical literacy, and included reading and science as minor areas of assessment. Scotland took part as a fully adjudicated region, i.e. the data met the quality standards with respect to the minimum required participation rates for schools as well as for students. The standards were established to minimise the potential for response biases. In the case of countries (or regions) meeting these standards, it is likely that any bias resulting from non-response would be negligible, *i.e.* typically smaller than the sampling error.

The main results for Scotland were reported in the initial report "Learning for Tomorrow's World" (OECD, 2004).

The following tables summarize the key findings with respect to

1. Between-school and within-school variation in student performance on the mathematics scale
2. Index of economic, social and cultural status (ESCS) and performance on the mathematics, reading and scales, by national quarters of the index
3. Index of disciplinary climate and performance on the mathematics scale, by national quarters of the index
4. Students access to teachers
5. Index of the quality of the schools' educational resources and performance on the mathematics scale, by national quarters of the index

Outcomes for Scotland are compared to (a) the OECD countries and the OECD average, as well as to (b) a selection of 'benchmarking OECD countries', namely Australia, Belgium, Canada, Denmark, Finland, Korea, the Netherlands, New Zealand and Sweden.

## 1. Between-school and within-school variation in student performance on the mathematics scale

### 1.1 OECD countries

Country	Mathematics				Total variation between schools expressed as a percentage of the total variation within the country <sup>2</sup>
	Total variation in SP <sup>1</sup>	Variation expressed as a percentage of the average variation in student performance (SP) across the OECD countries			
		Total variation in SP expressed as a percentage of the average variation in student performance across OECD countries	Total variation in SP between schools	Total variation in SP within schools	
<b>OECD Countries</b>					
Australia	9 036	105.1	22.0	82.3	21.1
Austria	8 455	98.4	55.5	49.5	52.9
Belgium	10 463	121.8	56.9	66.7	46.0
Canada	7 626	88.7	15.1	72.6	17.3
Czech Republic	8 581	99.9	50.5	55.2	47.8
Denmark	8 289	96.5	13.1	84.2	13.4
Finland	6 974	81.2	3.9	77.3	4.8
France	8 230	95.8	43.7	51.6	45.9
Germany	9 306	108.3	56.4	52.6	51.7
Greece	8 752	101.8	38.9	68.1	36.3
Hungary	8 726	101.5	66.0	47.3	58.3
Iceland	8 123	94.5	3.6	90.9	3.8
Ireland	7 213	83.9	13.4	71.2	15.9
Italy	9 153	106.5	56.8	52.0	52.2
Japan	9 994	116.3	62.1	55.0	53.0
Korea	8 531	99.3	42.0	58.2	42.0
Luxembourg	8 432	98.1	31.2	67.6	31.6
Mexico	7 295	84.9	29.1	44.8	39.4
Netherlands	7 897	91.9	54.5	39.5	58.0
New Zealand	9 457	110.1	20.1	90.9	18.1
Norway	8 432	98.1	6.5	91.7	6.6
Poland	8 138	94.7	12.0	83.1	12.6
Portugal	7 647	89.0	30.3	60.0	33.6
Scotland	7 110	82.7	10.0	70.4	12.6
Slovak Republic	8 478	98.7	41.5	58.0	41.7
Spain	7 803	90.8	17.2	70.2	19.7
Sweden	8 880	103.3	10.9	92.8	10.5
Switzerland	9 541	111.0	36.4	70.2	34.2
Turkey	10 952	127.4	68.7	56.5	54.9
United States	9 016	104.9	27.1	78.3	25.7
<b>OECD average variation</b>	8 593	100.0	33.6	67.0	

1. The variance components were estimated for all students in participating countries with data on socio-economic background and study programmes. Students in special education programmes were excluded from these analyses.

2. The total variance in student performance is obtained as the square of the standard deviation shown in Chapter 2 of the initial report. The statistical variance in student performance and not the standard deviation is used for this comparison to allow for the decomposition of variance in student performance. For reasons explained in the PISA 2003 Technical Report, the sum of the between and within-school variance components may, for some countries, differ slightly from the square of the standard deviation shown in Chapter 2.

3. The sum of the between- and within-school variance components, as an estimate from a sample, does not necessarily add up to the total.

## 1.2 Benchmarking countries

Country	Mathematics				
	Total variation in SP <sup>1</sup>	Variation expressed as a percentage of the average variation in student performance (SP) across the OECD countries			Total variation between schools expressed as a percentage of the total variation within the country <sup>2</sup>
		Total variation in SP expressed as a percentage of the average variation in student performance across OECD countries	Total variation in SP between schools	Total variation in SP within schools	
Australia	9 036	105.1	22.0	82.3	21.1
Belgium	10 463	121.8	56.9	66.7	46.0
Canada	7 626	88.7	15.1	72.6	17.3
Denmark	8 289	96.5	13.1	84.2	13.4
Finland	6 974	81.2	3.9	77.3	4.8
Korea	8 531	99.3	42.0	58.2	42.0
Netherlands	7 897	91.9	54.5	39.5	58.0
New Zealand	9 457	110.1	20.1	90.9	18.1
Scotland	7 110	82.7	10.0	70.4	12.6
Sweden	8 880	103.3	10.9	92.8	10.5
<b>OECD average variation</b>	8 593	100.0	33.6	67.0	

### ***1.3 Summary of results***

The table shows that the total variance in student performance in Scotland is the second lowest of all OECD-countries. The total variance is only lower in Finland.

Related to the OECD average, the total variance in student performance between schools is 10.0%, while within schools, it is 70.4%. Among the adjudicated OECD-countries, only Iceland, Finland and Norway have lower total variation between schools. The total variance between schools in Scotland, expressed as a percentage of the total variance within the country, is 12.6%.

## **2. Index of economic, social and cultural status (ESCS) and performance**

### ***2.1 Index of economic, social and cultural status (ESCS) and performance on the mathematics scale, by national quarters of the index***



### 2.1.1 OECD countries

Country	Index of economic, social and cultural status										Performance on the mathematics scale, by national quarters of the index of economic, social and cultural status								Change in the mathematics score per units of the index of economic, social and cultural status		Increased likelihood of students in the bottom quarter of the ESCS distribution scoring in the bottom quarter of the national mathematics performance distribution		Explained variation in student performance (R <sup>2</sup> )	
	All students		Bottom quarter		Second quarter		Third quarter		Top quarter		Bottom quarter		Second quarter		Third quarter		Top quarter		Change	S.E.	Ratio	S.E.	Percentage	S.E.
	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.	Mean score	S.E.	Mean score	S.E.	Mean score	S.E.	Mean score	S.E.						
<b>OECD Countries</b>																								
Australia	0.2	(0.0)	-0.8	(0.0)	0.0	(0.00)	0.5	(0.0)	1.3	(0.0)	479	(4.1)	513	(2.3)	537	(2.7)	572	(2.9)	42.4	(2.15)	2.3	(0.11)	13.67	(1.19)
Austria	0.1	(0.0)	-1.0	(0.0)	-0.3	(0.01)	0.3	(0.0)	1.2	(0.0)	462	(4.4)	492	(3.6)	520	(3.1)	556	(4.2)	43.3	(2.30)	2.2	(0.15)	16.03	(1.57)
Belgium	0.2	(0.0)	-1.1	(0.0)	-0.1	(0.00)	0.5	(0.0)	1.3	(0.0)	465	(3.8)	519	(3.0)	555	(2.6)	599	(2.7)	55.2	(1.72)	3.0	(0.13)	24.08	(1.32)
Canada	0.5	(0.0)	-0.6	(0.0)	0.2	(0.00)	0.8	(0.0)	1.5	(0.0)	500	(2.2)	527	(2.2)	544	(2.1)	574	(2.7)	34.2	(1.43)	2.1	(0.08)	10.52	(0.82)
Czech Republic	0.2	(0.0)	-0.8	(0.0)	-0.1	(0.00)	0.3	(0.0)	1.3	(0.0)	468	(3.4)	511	(3.5)	537	(3.7)	575	(4.3)	51.3	(2.15)	2.5	(0.14)	19.46	(1.44)
Denmark	0.2	(0.0)	-0.9	(0.0)	-0.1	(0.00)	0.5	(0.0)	1.3	(0.0)	464	(3.5)	505	(3.3)	526	(3.2)	565	(3.6)	44.4	(1.96)	2.4	(0.14)	17.61	(1.41)
Finland	0.2	(0.0)	-0.8	(0.0)	0.0	(0.00)	0.6	(0.0)	1.3	(0.0)	509	(2.7)	538	(2.3)	553	(2.6)	579	(3.0)	33.1	(1.63)	2.0	(0.08)	10.85	(1.05)
France	-0.1	(0.0)	-1.3	(0.0)	-0.4	(0.01)	0.2	(0.0)	1.1	(0.0)	458	(4.5)	502	(3.4)	527	(3.0)	562	(3.6)	43.1	(2.20)	2.6	(0.15)	19.62	(1.78)
Germany	0.2	(0.0)	-1.1	(0.0)	-0.1	(0.01)	0.4	(0.0)	1.4	(0.0)	452	(4.1)	494	(3.5)	533	(3.7)	572	(3.7)	46.6	(1.71)	2.8	(0.17)	22.81	(1.47)
Greece	-0.2	(0.0)	-1.4	(0.0)	-0.5	(0.00)	0.2	(0.0)	1.2	(0.0)	401	(4.3)	430	(4.1)	452	(3.9)	497	(4.8)	37.0	(2.19)	2.0	(0.14)	15.89	(1.91)
Hungary	-0.1	(0.0)	-1.1	(0.0)	-0.4	(0.00)	0.1	(0.0)	1.1	(0.0)	427	(4.4)	474	(3.2)	505	(3.4)	554	(4.0)	54.8	(2.27)	2.9	(0.20)	26.99	(1.81)
Iceland	0.7	(0.0)	-0.4	(0.0)	0.4	(0.01)	1.0	(0.0)	1.7	(0.0)	485	(3.0)	513	(2.7)	518	(3.0)	547	(2.3)	28.2	(1.74)	1.7	(0.10)	6.49	(0.83)
Ireland	-0.1	(0.0)	-1.2	(0.0)	-0.4	(0.01)	0.2	(0.0)	1.1	(0.0)	458	(3.8)	494	(2.9)	517	(2.9)	544	(3.7)	38.6	(1.96)	2.4	(0.15)	16.25	(1.55)
Italy	-0.1	(0.0)	-1.4	(0.0)	-0.5	(0.01)	0.2	(0.0)	1.2	(0.0)	417	(4.4)	457	(4.0)	482	(3.5)	507	(4.2)	34.5	(1.96)	2.2	(0.10)	13.60	(1.34)
Japan	-0.1	(0.0)	-1.0	(0.0)	-0.3	(0.00)	0.2	(0.0)	0.9	(0.0)	487	(5.3)	524	(4.4)	549	(4.8)	576	(6.1)	46.3	(4.14)	2.0	(0.14)	11.57	(1.69)
Korea	-0.1	(0.0)	-1.2	(0.0)	-0.3	(0.00)	0.2	(0.0)	1.0	(0.0)	497	(4.2)	533	(3.7)	553	(3.7)	587	(6.2)	40.9	(3.08)	2.1	(0.12)	14.21	(1.95)
Luxembourg	0.2	(0.0)	-1.3	(0.0)	-0.1	(0.01)	0.6	(0.0)	1.5	(0.0)	445	(2.3)	479	(3.1)	506	(2.7)	546	(2.9)	34.8	(1.23)	2.2	(0.11)	17.08	(1.01)
Mexico	-1.1	(0.1)	-2.6	(0.0)	-1.6	(0.01)	-0.8	(0.0)	0.5	(0.0)	342	(4.4)	370	(3.6)	397	(3.7)	433	(4.6)	29.3	(1.87)	2.2	(0.19)	17.12	(2.06)
Netherlands	0.1	(0.0)	-1.0	(0.0)	-0.2	(0.01)	0.4	(0.0)	1.2	(0.0)	496	(5.1)	529	(4.0)	554	(3.4)	595	(3.7)	44.7	(2.36)	2.3	(0.17)	18.59	(1.71)
New Zealand	0.2	(0.0)	-1.0	(0.0)	0.0	(0.00)	0.5	(0.0)	1.3	(0.0)	473	(3.6)	515	(3.1)	535	(3.2)	578	(2.7)	43.7	(1.62)	2.4	(0.14)	16.80	(1.20)
Norway	0.6	(0.0)	-0.4	(0.0)	0.3	(0.01)	0.9	(0.0)	1.6	(0.0)	451	(3.0)	485	(3.4)	508	(3.5)	540	(3.4)	44.0	(1.72)	2.1	(0.12)	14.10	(1.09)
Poland	-0.2	(0.0)	-1.2	(0.0)	-0.5	(0.00)	0.0	(0.0)	0.9	(0.0)	444	(4.0)	476	(3.0)	501	(3.2)	539	(2.9)	44.8	(1.81)	2.2	(0.12)	16.66	(1.21)
Portugal	-0.6	(0.0)	-2.2	(0.0)	-1.2	(0.01)	-0.2	(0.0)	1.1	(0.0)	425	(4.3)	453	(3.7)	470	(4.0)	519	(3.5)	28.9	(1.21)	2.2	(0.16)	17.53	(1.50)
Scotland	0.1	(0.0)	-1.1	(0.0)	-0.2	(0.01)	0.4	(0.0)	1.2	(0.0)	482	(4.0)	509	(3.2)	536	(3.1)	573	(3.2)	39.0	(1.88)	2.5	(0.16)	18.07	(1.43)
Slovak Republic	-0.1	(0.0)	-1.1	(0.0)	-0.4	(0.0)	0.1	(0.0)	1.0	(0.0)	438	(5.2)	486	(2.9)	517	(3.2)	554	(4.1)	53.2	(2.56)	2.9	(0.14)	22.29	(1.85)
Spain	-0.3	(0.0)	-1.6	(0.0)	-0.6	(0.01)	0.1	(0.0)	1.0	(0.0)	445	(3.4)	470	(3.2)	497	(2.7)	529	(2.8)	32.9	(1.67)	2.2	(0.11)	14.04	(1.33)
Sweden	0.3	(0.0)	-0.9	(0.0)	0.0	(0.00)	0.6	(0.0)	1.3	(0.0)	465	(3.6)	495	(3.1)	522	(3.1)	557	(4.1)	42.1	(2.06)	2.1	(0.10)	15.32	(1.32)
Switzerland	-0.1	(0.0)	-1.1	(0.0)	-0.3	(0.01)	0.2	(0.0)	1.0	(0.0)	472	(3.8)	521	(3.4)	539	(3.4)	576	(4.5)	47.5	(2.14)	2.5	(0.13)	16.77	(1.27)
Turkey	-1.0	(0.1)	-2.3	(0.0)	-1.5	(0.01)	-0.7	(0.0)	0.5	(0.0)	380	(4.5)	397	(4.5)	422	(7.0)	496	(12.1)	45.1	(4.82)	1.8	(0.16)	22.33	(3.70)
United States	0.3	(0.0)	-0.9	(0.0)	0.0	(0.01)	0.6	(0.0)	1.4	(0.0)	431	(3.2)	468	(3.6)	498	(3.1)	539	(3.4)	45.3	(1.58)	2.6	(0.14)	19.03	(1.20)
<b>OECD total</b>	<b>-0.1</b>	<b>(0.0)</b>	<b>-1.4</b>	<b>(0.0)</b>	<b>-0.4</b>	<b>(0.00)</b>	<b>0.3</b>	<b>(0.0)</b>	<b>1.2</b>	<b>(0.0)</b>	<b>423</b>	<b>(1.5)</b>	<b>481</b>	<b>(1.2)</b>	<b>510</b>	<b>(1.2)</b>	<b>546</b>	<b>(1.4)</b>	<b>47.1</b>	<b>(0.69)</b>	<b>2.9</b>	<b>(0.07)</b>	<b>22.2</b>	<b>(0.60)</b>
<b>OECD average</b>	<b>0.0</b>	<b>(0.0)</b>	<b>-1.3</b>	<b>(0.0)</b>	<b>-0.3</b>	<b>(0.00)</b>	<b>0.3</b>	<b>(0.0)</b>	<b>1.2</b>	<b>(0.0)</b>	<b>440</b>	<b>(1.0)</b>	<b>491</b>	<b>(0.7)</b>	<b>519</b>	<b>(0.6)</b>	<b>554</b>	<b>(0.8)</b>	<b>44.8</b>	<b>(0.44)</b>	<b>2.7</b>	<b>(0.03)</b>	<b>20.3</b>	<b>(0.35)</b>

Note. Results for the combined OECD area are represented in the tables by the **OECD total**. The OECD total takes the OECD countries as a single entity, to which each country contributes in proportion to the number of 15-year-olds enrolled in its schools. It illustrates how a country compares with the OECD area as a whole. By contrast, the **OECD average** is the mean of the data values for all OECD countries for which data are available or can be estimated. The OECD average can be used to see how a country compares on a given indicator with a typical OECD country. The OECD average does not take into account the absolute size of the student population in each country, *i.e.*, each country contributes equally to the average. The OECD total is generally used when references to the stock of human capital in the OECD area are made. Where the focus is on comparing performance across education systems, the OECD average is used.

Note. The **index of economic, social and cultural status** (ESCS) captures wider aspects of a student's family and home background in addition to occupational status. It was derived from the following variables: *i*) the highest international socio-economic index of occupational status of the father or mother; *ii*) the highest level of education of the father or mother converted into years of schooling (for the conversion of levels of education into years of schooling see Table A1.1); and *iii*) the number of books at home as well as access to home educational and cultural resources, obtained by asking students whether they had at their home: a desk to study at, a room of their own, a quiet place to study, a computer they can use for school work, educational software, a link to the Internet, their own calculator, classic literature, books of poetry, works of art (e.g., paintings), books to help with their school work, and a dictionary. The rationale for the choice of these variables was that socio-economic status is usually seen as being determined by occupational status, education and wealth. As no direct measure on parental wealth was available from PISA, access to relevant household items was used as a proxy.

Note. The results reported are based on students' self-reports.

## 2.1.2 Benchmarking countries

Country	Index of economic, social and cultural status										Performance on the mathematics scale, by national quarters of the index of economic, social and cultural status								Change in the mathematics score per units of the index of economic, social and cultural status	Increased likelihood of students in the bottom quarter of the ESCS distribution scoring in the bottom quarter of the national mathematics performance distribution	Explained variation in student performance (R <sup>2</sup> )			
	All students		Bottom quarter		Second quarter		Third quarter		Top quarter		Bottom quarter		Second quarter		Third quarter		Top quarter							
	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.	Mean score	S.E.	Mean score	S.E.	Mean score	S.E.	Mean score	S.E.					Change	S.E.
Australia	0.2	(0.0)	-0.8	(0.0)	0.0	(0.00)	0.5	(0.0)	1.3	(0.0)	479	(4.1)	513	(2.3)	537	(2.7)	572	(2.9)	42.4	(2.15)	2.3	(0.11)	13.67	(1.19)
Belgium	0.2	(0.0)	-1.1	(0.0)	-0.1	(0.00)	0.5	(0.0)	1.3	(0.0)	465	(3.8)	519	(3.0)	555	(2.6)	599	(2.7)	55.2	(1.72)	3.0	(0.13)	24.08	(1.32)
Canada	0.5	(0.0)	-0.6	(0.0)	0.2	(0.00)	0.8	(0.0)	1.5	(0.0)	500	(2.2)	527	(2.2)	544	(2.1)	574	(2.7)	34.2	(1.43)	2.1	(0.08)	10.52	(0.82)
Denmark	0.2	(0.0)	-0.9	(0.0)	-0.1	(0.00)	0.5	(0.0)	1.3	(0.0)	464	(3.5)	505	(3.3)	526	(3.2)	565	(3.6)	44.4	(1.96)	2.4	(0.14)	17.61	(1.41)
Finland	0.2	(0.0)	-0.8	(0.0)	0.0	(0.00)	0.6	(0.0)	1.3	(0.0)	509	(2.7)	538	(2.3)	553	(2.6)	579	(3.0)	33.1	(1.63)	2.0	(0.08)	10.85	(1.05)
Korea	-0.1	(0.0)	-1.2	(0.0)	-0.3	(0.00)	0.2	(0.0)	1.0	(0.0)	497	(4.2)	533	(3.7)	553	(3.7)	587	(6.2)	40.9	(3.08)	2.1	(0.12)	14.21	(1.95)
Netherlands	0.1	(0.0)	-1.0	(0.0)	-0.2	(0.01)	0.4	(0.0)	1.2	(0.0)	496	(5.1)	529	(4.0)	554	(3.4)	595	(3.7)	44.7	(2.36)	2.3	(0.17)	18.59	(1.71)
New Zealand	0.2	(0.0)	-1.0	(0.0)	0.0	(0.00)	0.5	(0.0)	1.3	(0.0)	473	(3.6)	515	(3.1)	535	(3.2)	578	(2.7)	43.7	(1.62)	2.4	(0.14)	16.80	(1.20)
Scotland	0.1	(0.0)	-1.1	(0.0)	-0.2	(0.01)	0.4	(0.0)	1.2	(0.0)	482	(4.0)	509	(3.2)	536	(3.1)	573	(3.2)	39.0	(1.88)	2.5	(0.16)	18.07	(1.43)
Sweden	0.3	(0.0)	-0.9	(0.0)	0.0	(0.00)	0.6	(0.0)	1.3	(0.0)	465	(3.6)	495	(3.1)	522	(3.1)	557	(4.1)	42.1	(2.06)	2.1	(0.10)	15.32	(1.32)
<b>OECD total</b>	<b>-0.1</b>	<b>(0.0)</b>	<b>-1.4</b>	<b>(0.0)</b>	<b>-0.4</b>	<b>(0.00)</b>	<b>0.3</b>	<b>(0.0)</b>	<b>1.2</b>	<b>(0.0)</b>	<b>423</b>	<b>(1.5)</b>	<b>481</b>	<b>(1.2)</b>	<b>510</b>	<b>(1.2)</b>	<b>546</b>	<b>(1.4)</b>	<b>47.1</b>	<b>(0.69)</b>	<b>2.9</b>	<b>(0.07)</b>	<b>22.2</b>	<b>(0.60)</b>
<b>OECD average</b>	<b>0.0</b>	<b>(0.0)</b>	<b>-1.3</b>	<b>(0.0)</b>	<b>-0.3</b>	<b>(0.00)</b>	<b>0.3</b>	<b>(0.0)</b>	<b>1.2</b>	<b>(0.0)</b>	<b>440</b>	<b>(1.0)</b>	<b>491</b>	<b>(0.7)</b>	<b>519</b>	<b>(0.6)</b>	<b>554</b>	<b>(0.8)</b>	<b>44.8</b>	<b>(0.44)</b>	<b>2.7</b>	<b>(0.03)</b>	<b>20.3</b>	<b>(0.35)</b>

## 2.2 Index of economic, social and cultural status (ESCS) and performance on the reading scale, by national quarters of the index

### 2.2.1 OECD countries

Country	Performance on the reading scale, by national quarters of the index of economic, social and cultural status								Change in the reading score per units of the index of economic, social and cultural status		Increased likelihood of students in the bottom quarter of the ESCS distribution scoring in the bottom quarter of the national reading performance distribution		Explained variation in student performance (R <sup>2</sup> )	
	Bottom quarter		Second quarter		Third quarter		Top quarter		Change	S.E.	Ratio	S.E.	Percentage	S.E.
	Mean score	S.E.	Mean score	S.E.	Mean score	S.E.	Mean score	S.E.						
<b>OECD Countries</b>														
Australia	479	(3.7)	513	(2.5)	539	(2.5)	576	(3.0)	44.0	(1.94)	2.2	(0.11)	14.22	(1.08)
Austria	435	(4.7)	478	(4.0)	508	(3.7)	554	(3.7)	53.9	(2.30)	2.4	(0.15)	21.27	(1.61)
Belgium	445	(4.7)	498	(3.4)	535	(3.0)	572	(2.8)	53.5	(2.02)	2.9	(0.14)	22.81	(1.37)
Canada	495	(2.4)	525	(2.3)	539	(2.0)	568	(2.4)	33.5	(1.32)	2.0	(0.07)	9.92	(0.75)
Czech Republic	449	(3.8)	488	(3.1)	508	(3.2)	540	(3.7)	44.0	(2.16)	2.2	(0.12)	15.51	(1.45)
Denmark	445	(4.5)	483	(3.3)	507	(3.1)	537	(3.4)	41.2	(1.91)	2.5	(0.14)	16.29	(1.27)
Finland	510	(2.7)	538	(2.3)	553	(2.6)	575	(2.5)	30.1	(1.58)	2.0	(0.09)	9.56	(0.97)
France	439	(5.5)	489	(3.9)	514	(3.1)	548	(3.4)	45.5	(2.69)	2.8	(0.18)	19.53	(1.95)
Germany	437	(4.2)	487	(3.9)	526	(3.9)	560	(3.6)	48.5	(1.69)	2.8	(0.18)	22.52	(1.35)
Greece	429	(4.5)	465	(4.9)	477	(5.5)	520	(4.2)	34.1	(2.06)	1.9	(0.14)	10.89	(1.43)
Hungary	426	(4.2)	468	(3.5)	498	(3.0)	537	(3.9)	48.3	(2.28)	2.7	(0.16)	21.74	(1.83)
Iceland	467	(3.5)	490	(3.0)	494	(4.0)	519	(3.4)	24.0	(2.16)	1.4	(0.09)	4.00	(0.75)
Ireland	468	(4.0)	507	(3.6)	531	(3.0)	556	(4.0)	39.3	(2.12)	2.3	(0.14)	16.51	(1.69)
Italy	426	(5.1)	463	(4.0)	494	(3.4)	521	(3.2)	36.8	(1.96)	2.2	(0.12)	14.08	(1.27)
Japan	449	(5.8)	492	(4.7)	515	(4.6)	537	(5.1)	46.7	(3.76)	2.1	(0.12)	10.78	(1.50)
Korea	499	(5.0)	526	(3.4)	543	(3.1)	569	(5.0)	31.9	(2.76)	1.9	(0.10)	10.91	(1.69)
Luxembourg	421	(2.9)	472	(3.3)	499	(2.9)	531	(3.0)	37.9	(1.38)	2.6	(0.12)	17.36	(1.12)
Mexico	350	(5.3)	385	(3.6)	413	(4.9)	452	(5.3)	32.4	(2.31)	2.4	(0.21)	16.90	(2.29)
Netherlands	478	(4.9)	506	(3.6)	528	(3.1)	561	(3.4)	37.5	(2.17)	2.1	(0.15)	15.51	(1.62)
New Zealand	468	(4.0)	512	(3.8)	535	(3.5)	579	(3.1)	46.4	(1.78)	2.4	(0.15)	16.66	(1.20)
Norway	454	(3.8)	495	(3.8)	511	(4.0)	544	(4.3)	44.5	(2.12)	2.1	(0.10)	11.73	(1.14)
Poland	450	(4.9)	479	(3.4)	511	(4.4)	547	(3.7)	46.4	(2.29)	2.2	(0.14)	15.82	(1.30)
Portugal	437	(5.1)	469	(4.0)	482	(4.7)	524	(4.2)	26.1	(1.76)	2.0	(0.11)	12.83	(1.60)
Scotland	471	(4.5)	503	(3.6)	530	(3.0)	565	(3.8)	40.5	(2.11)	2.6	(0.18)	19.01	(1.69)
Slovak Republic	410	(5.0)	458	(2.6)	490	(2.7)	519	(3.8)	51.1	(2.48)	2.8	(0.13)	20.93	(1.89)
Spain	441	(4.1)	467	(3.6)	494	(3.4)	521	(3.4)	31.9	(2.05)	2.0	(0.12)	11.37	(1.33)
Sweden	471	(3.8)	504	(3.0)	528	(2.6)	558	(3.8)	40.9	(2.12)	2.0	(0.11)	14.24	(1.26)
Switzerland	446	(3.7)	494	(3.8)	513	(3.3)	547	(4.2)	47.2	(2.20)	2.5	(0.14)	17.89	(1.51)
Turkey	399	(5.0)	421	(4.3)	443	(6.4)	502	(10.1)	39.1	(4.08)	1.9	(0.17)	20.34	(3.55)
United States	440	(3.9)	484	(3.8)	510	(3.6)	551	(3.3)	46.7	(1.66)	2.4	(0.12)	17.98	(1.24)
<b>OECD total</b>	<b>424</b>	<b>(1.5)</b>	<b>479</b>	<b>(1.5)</b>	<b>509</b>	<b>(1.2)</b>	<b>544</b>	<b>(1.4)</b>	<b>45.9</b>	<b>(0.61)</b>	<b>2.8</b>	<b>(0.06)</b>	<b>21.3</b>	<b>(0.54)</b>
<b>OECD average</b>	<b>438</b>	<b>(1.0)</b>	<b>486</b>	<b>(0.8)</b>	<b>513</b>	<b>(0.6)</b>	<b>545</b>	<b>(0.7)</b>	<b>41.9</b>	<b>(0.39)</b>	<b>2.5</b>	<b>(0.03)</b>	<b>17.9</b>	<b>(0.31)</b>

2.2.2 Benchmarking countries

Country	Performance on the reading scale, by national quarters of the index of economic, social and cultural status								Change in the reading score per units of the index of economic, social and cultural status		Increased likelihood of students in the bottom quarter of the ESCS distribution scoring in the bottom quarter of the national reading performance distribution		Explained variation in student performance (R <sup>2</sup> )	
	Bottom quarter		Second quarter		Third quarter		Top quarter							
	Mean score	S.E.	Mean score	S.E.	Mean score	S.E.	Mean score	S.E.	Change	S.E.	Ratio	S.E.	Percentage	S.E.
Australia	479	(3.7)	513	(2.5)	539	(2.5)	576	(3.0)	44.0	(1.94)	2.2	(0.11)	14.22	(1.08)
Belgium	445	(4.7)	498	(3.4)	535	(3.0)	572	(2.8)	53.5	(2.02)	2.9	(0.14)	22.81	(1.37)
Canada	495	(2.4)	525	(2.3)	539	(2.0)	568	(2.4)	33.5	(1.32)	2.0	(0.07)	9.92	(0.75)
Denmark	445	(4.5)	483	(3.3)	507	(3.1)	537	(3.4)	41.2	(1.91)	2.5	(0.14)	16.29	(1.27)
Finland	510	(2.7)	538	(2.3)	553	(2.6)	575	(2.5)	30.1	(1.58)	2.0	(0.09)	9.56	(0.97)
Korea	499	(5.0)	526	(3.4)	543	(3.1)	569	(5.0)	31.9	(2.76)	1.9	(0.10)	10.91	(1.69)
Netherlands	478	(4.9)	506	(3.6)	528	(3.1)	561	(3.4)	37.5	(2.17)	2.1	(0.15)	15.51	(1.62)
New Zealand	468	(4.0)	512	(3.8)	535	(3.5)	579	(3.1)	46.4	(1.78)	2.4	(0.15)	16.66	(1.20)
Scotland	471	(4.5)	503	(3.6)	530	(3.0)	565	(3.8)	40.5	(2.11)	2.6	(0.18)	19.01	(1.69)
Sweden	471	(3.8)	504	(3.0)	528	(2.6)	558	(3.8)	40.9	(2.12)	2.0	(0.11)	14.24	(1.26)
<b>OECD total</b>	<b>424</b>	<b>(1.5)</b>	<b>479</b>	<b>(1.5)</b>	<b>509</b>	<b>(1.2)</b>	<b>544</b>	<b>(1.4)</b>	<b>45.9</b>	<b>(0.61)</b>	<b>2.8</b>	<b>(0.06)</b>	<b>21.3</b>	<b>(0.54)</b>
<b>OECD average</b>	<b>438</b>	<b>(1.0)</b>	<b>486</b>	<b>(0.8)</b>	<b>513</b>	<b>(0.6)</b>	<b>545</b>	<b>(0.7)</b>	<b>41.9</b>	<b>(0.39)</b>	<b>2.5</b>	<b>(0.03)</b>	<b>17.9</b>	<b>(0.31)</b>

## 2.3 Index of economic, social and cultural status (ESCS) and performance on the science scale, by national quarters of the index

### 2.3.1 OECD countries

Country	Performance on the science scale, by national quarters of the index of economic, social and cultural status								Change in the science score per 16.3 units of the index of economic, social and cultural status	Increased likelihood of students in the bottom quarter of the ESCS distribution scoring in the bottom quarter of the national science performance distribution		Explained variation in student performance (R <sup>2</sup> )		
	Bottom quarter		Second quarter		Third quarter		Top quarter							
	Mean score	S.E.	Mean score	S.E.	Mean score	S.E.	Mean score	S.E.						Change
<b>OECD Countries</b>														
Australia	477	(3.7)	511	(2.4)	538	(2.7)	579	(3.0)	46.7	(2.15)	2.1	(0.10)	14.57	(1.15)
Austria	440	(4.5)	477	(3.8)	507	(3.5)	547	(4.0)	48.6	(2.19)	2.3	(0.15)	18.67	(1.48)
Belgium	444	(4.2)	499	(3.3)	535	(2.7)	576	(2.8)	55.0	(1.76)	3.0	(0.13)	24.48	(1.32)
Canada	479	(2.5)	513	(2.6)	533	(2.6)	568	(2.9)	40.4	(1.57)	2.0	(0.06)	11.36	(0.82)
Czech Republic	476	(4.0)	517	(3.3)	541	(3.9)	580	(4.0)	50.3	(2.21)	2.2	(0.13)	16.44	(1.38)
Denmark	422	(4.7)	463	(3.9)	490	(3.8)	529	(3.9)	47.5	(2.33)	2.4	(0.13)	16.28	(1.40)
Finland	511	(3.1)	542	(2.5)	557	(2.9)	584	(2.8)	34.4	(1.71)	1.9	(0.09)	9.91	(0.97)
France	444	(5.7)	499	(4.6)	531	(3.5)	577	(4.1)	53.9	(2.84)	2.7	(0.17)	20.92	(1.97)
Germany	442	(4.6)	492	(3.8)	536	(3.6)	581	(4.0)	54.0	(1.73)	3.0	(0.20)	25.90	(1.51)
Greece	437	(4.0)	469	(4.3)	488	(4.8)	531	(4.2)	35.9	(2.01)	2.0	(0.12)	13.00	(1.48)
Hungary	445	(4.3)	489	(3.7)	517	(3.7)	563	(4.4)	50.6	(2.42)	2.7	(0.16)	21.36	(1.75)
Iceland	463	(3.3)	492	(3.0)	498	(3.7)	529	(3.6)	30.6	(2.12)	1.6	(0.10)	6.82	(0.95)
Ireland	454	(4.2)	495	(3.5)	522	(3.3)	552	(3.9)	44.0	(2.10)	2.4	(0.14)	17.76	(1.62)
Italy	431	(5.2)	475	(4.1)	506	(3.9)	534	(3.8)	39.5	(2.20)	2.4	(0.14)	14.11	(1.32)
Japan	499	(5.8)	536	(4.8)	566	(4.8)	590	(6.4)	48.4	(4.45)	2.1	(0.12)	10.62	(1.67)
Korea	495	(5.0)	531	(4.0)	549	(3.9)	580	(6.6)	39.0	(3.31)	2.0	(0.12)	10.93	(1.75)
Luxembourg	424	(3.1)	471	(3.6)	499	(3.2)	541	(3.3)	39.6	(1.62)	2.4	(0.13)	17.70	(1.27)
Mexico	364	(4.2)	391	(3.4)	415	(3.7)	450	(4.6)	27.9	(1.86)	2.0	(0.16)	15.07	(1.82)
Netherlands	478	(5.5)	514	(4.3)	541	(3.6)	583	(3.8)	47.0	(2.43)	2.3	(0.15)	17.27	(1.62)
New Zealand	467	(3.6)	512	(3.3)	534	(3.4)	579	(3.0)	46.4	(1.66)	2.3	(0.13)	16.81	(1.13)
Norway	436	(3.7)	476	(3.9)	498	(3.7)	531	(5.0)	47.4	(2.32)	2.2	(0.11)	12.91	(1.21)
Poland	447	(4.6)	478	(3.5)	508	(3.8)	558	(3.5)	52.1	(2.06)	2.2	(0.12)	17.49	(1.29)
Portugal	425	(4.8)	456	(4.2)	473	(3.9)	519	(3.9)	28.6	(1.60)	2.1	(0.12)	15.10	(1.55)
Scotland	460	(4.7)	494	(4.3)	528	(3.7)	577	(3.9)	49.5	(2.29)	2.5	(0.17)	20.57	(1.55)
Slovak Republic	431	(6.8)	482	(2.8)	514	(3.1)	553	(4.0)	57.6	(3.59)	2.7	(0.15)	21.81	(2.29)
Spain	443	(3.6)	470	(3.8)	501	(2.8)	535	(3.6)	36.2	(2.01)	2.2	(0.11)	13.30	(1.38)
Sweden	457	(4.2)	493	(3.3)	522	(3.7)	556	(4.6)	45.7	(2.38)	2.1	(0.11)	14.15	(1.36)
Switzerland	449	(3.9)	505	(3.9)	529	(3.8)	572	(5.0)	55.9	(2.49)	2.5	(0.14)	19.44	(1.54)
Turkey	393	(4.8)	411	(4.3)	433	(6.3)	501	(10.7)	41.2	(4.43)	1.8	(0.17)	22.24	(3.76)
United States	436	(3.7)	477	(3.4)	505	(3.4)	551	(3.5)	47.8	(1.67)	2.4	(0.15)	18.52	(1.33)
<b>OECD total</b>	<b>430</b>	<b>(1.4)</b>	<b>486</b>	<b>(1.3)</b>	<b>517</b>	<b>(1.1)</b>	<b>555</b>	<b>(1.5)</b>	<b>47.3</b>	<b>(0.67)</b>	<b>2.7</b>	<b>(0.06)</b>	<b>20.4</b>	<b>(0.55)</b>
<b>OECD average</b>	<b>440</b>	<b>(0.9)</b>	<b>490</b>	<b>(0.7)</b>	<b>518</b>	<b>(0.7)</b>	<b>554</b>	<b>(0.8)</b>	<b>44.4</b>	<b>(0.39)</b>	<b>2.6</b>	<b>(0.03)</b>	<b>17.9</b>	<b>(0.29)</b>

### 2.3.2 Benchmarking countries

Country	Performance on the science scale, by national quarters of the index of economic, social and cultural status								Change in the science score per 16.3 units of the index of economic, social and cultural status		Increased likelihood of students in the bottom quarter of the ESCS distribution scoring in the bottom quarter of the national science performance distribution		Explained variation in student performance (R <sup>2</sup> )	
	Bottom quarter		Second quarter		Third quarter		Top quarter							
	Mean score	S.E.	Mean score	S.E.	Mean score	S.E.	Mean score	S.E.	Change	S.E.	Ratio	S.E.	Percentage	S.E.
Australia	477	(3.7)	511	(2.4)	538	(2.7)	579	(3.0)	46.7	(2.15)	2.1	(0.10)	14.57	(1.15)
Belgium	444	(4.2)	499	(3.3)	535	(2.7)	576	(2.8)	55.0	(1.76)	3.0	(0.13)	24.48	(1.32)
Canada	479	(2.5)	513	(2.6)	533	(2.6)	568	(2.9)	40.4	(1.57)	2.0	(0.06)	11.36	(0.82)
Denmark	422	(4.7)	463	(3.9)	490	(3.8)	529	(3.9)	47.5	(2.33)	2.4	(0.13)	16.28	(1.40)
Finland	511	(3.1)	542	(2.5)	557	(2.9)	584	(2.8)	34.4	(1.71)	1.9	(0.09)	9.91	(0.97)
Korea	495	(5.0)	531	(4.0)	549	(3.9)	580	(6.6)	39.0	(3.31)	2.0	(0.12)	10.93	(1.75)
Netherlands	478	(5.5)	514	(4.3)	541	(3.6)	583	(3.8)	47.0	(2.43)	2.3	(0.15)	17.27	(1.62)
New Zealand	467	(3.6)	512	(3.3)	534	(3.4)	579	(3.0)	46.4	(1.66)	2.3	(0.13)	16.81	(1.13)
Scotland	460	(4.7)	494	(4.3)	528	(3.7)	577	(3.9)	49.5	(2.29)	2.5	(0.17)	20.57	(1.55)
Sweden	457	(4.2)	493	(3.3)	522	(3.7)	556	(4.6)	45.7	(2.38)	2.1	(0.11)	14.15	(1.36)
<b>OECD total</b>	<b>430</b>	<b>(1.4)</b>	<b>486</b>	<b>(1.3)</b>	<b>517</b>	<b>(1.1)</b>	<b>555</b>	<b>(1.5)</b>	<b>47.3</b>	<b>(0.67)</b>	<b>2.7</b>	<b>(0.06)</b>	<b>20.4</b>	<b>(0.55)</b>
<b>OECD average</b>	<b>440</b>	<b>(0.9)</b>	<b>490</b>	<b>(0.7)</b>	<b>518</b>	<b>(0.7)</b>	<b>554</b>	<b>(0.8)</b>	<b>44.4</b>	<b>(0.39)</b>	<b>2.6</b>	<b>(0.03)</b>	<b>17.9</b>	<b>(0.29)</b>

## *2.4 Summary of results*

Overall, the distribution of the ESCS in Scotland is comparable to the OECD average. At the bottom quarter of the distribution, the ESCS is slightly higher than average.

The relationship between socio-economic background and performance: In mathematics and reading, the performance of students in Scotland is clearly above OECD average in all quarters of the ESCS distribution. The difference is most pronounced at the bottom quarter of the ESCS, where it reaches 43 and 32 competence points, in mathematics and reading, respectively.

In science, the differences in performance are not as large as in the other assessment areas. In the bottom quarter and the top quarter of the ESCS distribution, the performance of students in Scotland is above the OECD average (the performance differences are 20 and 23 points, respectively).

### 3. Index of disciplinary climate and performance on the mathematics scale, by national quarters of the index

#### 3.1 OECD countries

Country	Index of disciplinary climate										Performance on the mathematics scale by national quarters of the index of disciplinary climate								Change in the mathematics score per unit of the index of disciplinary climate		Increased likelihood of students in the bottom quarter of the index of disciplinary climate distribution scoring in the bottom quarter of the national mathematics performance distribution		Explained variation in student performance (R <sup>2</sup> )	
	All students		Bottom quarter		Second quarter		Third quarter		Top quarter		Bottom quarter		Second quarter		Third quarter		Top quarter		Change	S.E.	Ratio	S.E.	Percentage	S.E.
	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.	Mean score	S.E.	Mean index	S.E.	Mean score	S.E.								
	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.	Mean score	S.E.	Mean index	S.E.	Mean score	S.E.	Change	S.E.	Ratio	S.E.	Percentage	S.E.		
<b>OECD Countries</b>																								
Australia	-0.01	(0.02)	-1.29	(0.01)	-0.34	(0.00)	0.25	(0.00)	1.32	(0.01)	498	(2.6)	514	(2.77)	532	(2.82)	560	(3.1)	21.01	(1.07)	1.63	(0.06)	5.34	(0.49)
Austria	0.21	(0.03)	-1.21	(0.02)	-0.23	(0.01)	0.55	(0.01)	1.74	(0.02)	480	(4.9)	492	(4.12)	520	(4.04)	540	(4.9)	19.25	(2.03)	1.58	(0.11)	5.87	(1.23)
Belgium	0.04	(0.02)	-1.26	(0.01)	-0.31	(0.01)	0.31	(0.01)	1.42	(0.02)	508	(3.7)	526	(3.76)	549	(2.83)	573	(3.2)	23.46	(1.57)	1.62	(0.09)	5.87	(0.71)
Canada	0.02	(0.01)	-1.18	(0.01)	-0.27	(0.00)	0.25	(0.00)	1.27	(0.01)	515	(2.5)	528	(2.31)	542	(2.26)	560	(2.4)	17.27	(0.92)	1.50	(0.06)	3.74	(0.40)
Czech Republic	-0.01	(0.03)	-1.27	(0.02)	-0.30	(0.01)	0.27	(0.01)	1.24	(0.02)	502	(5.0)	514	(4.12)	528	(4.04)	548	(4.6)	16.74	(2.05)	1.56	(0.10)	3.27	(0.79)
Denmark	-0.08	(0.02)	-1.18	(0.02)	-0.33	(0.01)	0.18	(0.00)	1.03	(0.02)	505	(3.8)	509	(3.89)	521	(4.02)	532	(4.0)	10.35	(2.07)	1.23	(0.08)	1.06	(0.43)
Finland	-0.15	(0.02)	-1.25	(0.01)	-0.43	(0.00)	0.09	(0.00)	0.99	(0.02)	533	(3.0)	539	(3.33)	546	(2.50)	561	(2.8)	10.36	(1.50)	1.35	(0.06)	1.28	(0.36)
France	-0.13	(0.03)	-1.48	(0.02)	-0.50	(0.01)	0.15	(0.01)	1.32	(0.02)	498	(4.1)	505	(3.81)	517	(4.29)	535	(4.1)	12.15	(1.83)	1.28	(0.09)	2.23	(0.62)
Germany	0.30	(0.03)	-1.14	(0.02)	-0.11	(0.01)	0.67	(0.01)	1.79	(0.02)	483	(5.2)	503	(4.76)	531	(4.08)	539	(4.1)	18.62	(1.73)	1.77	(0.13)	4.96	(0.89)
Greece	-0.22	(0.03)	-1.21	(0.01)	-0.50	(0.01)	0.00	(0.00)	0.82	(0.02)	436	(4.1)	435	(4.04)	450	(5.00)	467	(5.6)	14.05	(2.95)	1.14	(0.07)	1.52	(0.62)
Hungary	0.17	(0.03)	-1.06	(0.02)	-0.13	(0.01)	0.45	(0.01)	1.42	(0.02)	470	(4.3)	475	(4.17)	497	(4.25)	522	(4.5)	20.27	(2.30)	1.42	(0.09)	4.60	(0.98)
Iceland	-0.15	(0.01)	-1.22	(0.02)	-0.39	(0.01)	0.11	(0.00)	0.90	(0.02)	501	(3.2)	512	(3.30)	523	(2.59)	529	(2.9)	12.59	(1.71)	1.39	(0.09)	1.50	(0.40)
Ireland	0.27	(0.03)	-1.22	(0.02)	-0.09	(0.01)	0.67	(0.01)	1.70	(0.02)	482	(4.0)	498	(3.99)	509	(3.52)	526	(4.0)	15.51	(1.60)	1.56	(0.11)	4.46	(0.91)
Italy	-0.10	(0.03)	-1.40	(0.02)	-0.47	(0.01)	0.23	(0.01)	1.23	(0.02)	452	(4.6)	455	(4.22)	471	(4.17)	487	(4.4)	12.48	(1.79)	1.22	(0.08)	1.84	(0.50)
Japan	0.44	(0.03)	-0.72	(0.02)	0.15	(0.01)	0.75	(0.01)	1.60	(0.02)	489	(5.7)	530	(5.36)	551	(5.00)	572	(5.1)	32.68	(2.91)	2.19	(0.16)	9.25	(1.72)
Korea	0.12	(0.02)	-0.89	(0.01)	-0.11	(0.01)	0.28	(0.01)	1.18	(0.01)	521	(4.3)	540	(3.80)	554	(4.22)	554	(4.3)	14.70	(2.17)	1.47	(0.09)	1.76	(0.47)
Luxembourg	-0.21	(0.02)	-1.49	(0.02)	-0.58	(0.01)	0.02	(0.01)	1.23	(0.02)	477	(2.8)	485	(3.15)	503	(2.69)	516	(3.0)	13.94	(1.40)	1.42	(0.08)	2.79	(0.54)
Mexico	0.00	(0.02)	-1.11	(0.02)	-0.26	(0.01)	0.23	(0.00)	1.15	(0.01)	365	(4.4)	386	(4.27)	398	(4.28)	411	(4.5)	18.85	(2.05)	1.57	(0.09)	4.13	(0.81)
Netherlands	-0.13	(0.03)	-1.26	(0.03)	-0.41	(0.01)	0.13	(0.01)	1.03	(0.02)	532	(4.2)	535	(5.15)	547	(4.50)	566	(4.0)	12.43	(2.36)	1.26	(0.09)	1.66	(0.61)
New Zealand	-0.17	(0.02)	-1.43	(0.02)	-0.47	(0.01)	0.12	(0.01)	1.12	(0.02)	501	(3.9)	518	(3.27)	530	(3.45)	555	(3.6)	17.86	(1.60)	1.60	(0.10)	3.52	(0.61)
Norway	-0.24	(0.02)	-1.26	(0.02)	-0.46	(0.01)	0.00	(0.00)	0.77	(0.02)	483	(3.7)	493	(3.51)	507	(4.08)	509	(3.9)	11.84	(1.85)	1.40	(0.08)	1.18	(0.38)
Poland	0.10	(0.04)	-1.15	(0.02)	-0.20	(0.01)	0.37	(0.01)	1.38	(0.02)	479	(4.3)	480	(4.32)	491	(3.55)	514	(3.4)	13.53	(1.98)	1.33	(0.08)	2.31	(0.67)
Portugal	0.01	(0.02)	-1.09	(0.02)	-0.27	(0.01)	0.26	(0.01)	1.15	(0.02)	437	(5.0)	459	(5.28)	478	(3.99)	493	(3.8)	23.74	(2.08)	1.84	(0.10)	5.78	(0.89)
Scotland	0.19	(0.04)	-1.26	(0.02)	-0.17	(0.01)	0.56	(0.01)	1.62	(0.03)	487	(4.4)	515	(3.96)	536	(3.88)	561	(3.6)	23.90	(2.05)	1.96	(0.17)	10.51	(1.72)
Slovak Republic	-0.10	(0.02)	-1.25	(0.02)	-0.37	(0.00)	0.17	(0.01)	1.07	(0.02)	484	(4.6)	496	(4.58)	500	(4.17)	517	(3.5)	13.55	(1.59)	1.33	(0.08)	1.81	(0.39)
Spain	-0.04	(0.03)	-1.22	(0.02)	-0.38	(0.01)	0.21	(0.00)	1.24	(0.02)	465	(3.8)	478	(3.46)	493	(2.83)	511	(3.7)	16.89	(1.67)	1.48	(0.09)	3.61	(0.75)
Sweden	-0.05	(0.03)	-1.13	(0.02)	-0.31	(0.01)	0.16	(0.01)	1.10	(0.03)	491	(4.1)	507	(2.98)	516	(3.14)	527	(4.3)	15.35	(2.09)	1.37	(0.09)	2.20	(0.60)
Switzerland	0.10	(0.03)	-1.17	(0.02)	-0.28	(0.01)	0.36	(0.01)	1.49	(0.02)	502	(6.5)	516	(4.20)	542	(4.20)	552	(4.1)	17.31	(2.56)	1.60	(0.13)	3.52	(1.09)
Turkey	-0.12	(0.03)	-1.26	(0.02)	-0.37	(0.00)	0.13	(0.00)	1.02	(0.02)	397	(6.1)	413	(5.89)	433	(7.05)	470	(11.1)	29.99	(4.37)	1.49	(0.10)	7.09	(1.60)
United States	0.12	(0.02)	-1.14	(0.02)	-0.19	(0.01)	0.40	(0.01)	1.44	(0.02)	445	(3.9)	478	(3.59)	499	(3.81)	518	(3.3)	25.83	(1.40)	1.92	(0.10)	7.85	(0.83)
<b>OECD total</b>	<b>0.09</b>	<b>(0.01)</b>	<b>-1.17</b>	<b>(0.01)</b>	<b>-0.23</b>	<b>(0.00)</b>	<b>0.35</b>	<b>(0.00)</b>	<b>1.38</b>	<b>(0.01)</b>	<b>461</b>	<b>(1.6)</b>	<b>482</b>	<b>(1.43)</b>	<b>500</b>	<b>(1.26)</b>	<b>526</b>	<b>(1.3)</b>	<b>23.36</b>	<b>(0.65)</b>	<b>1.66</b>	<b>(0.04)</b>	<b>5.4</b>	<b>(0.27)</b>
<b>OECD average</b>	<b>0.00</b>	<b>(0.01)</b>	<b>-1.23</b>	<b>(0.00)</b>	<b>-0.33</b>	<b>(0.00)</b>	<b>0.23</b>	<b>(0.00)</b>	<b>1.28</b>	<b>(0.00)</b>	<b>480</b>	<b>(0.9)</b>	<b>493</b>	<b>(0.84)</b>	<b>508</b>	<b>(0.77)</b>	<b>530</b>	<b>(0.8)</b>	<b>18.27</b>	<b>(0.38)</b>	<b>1.47</b>	<b>(0.02)</b>	<b>3.4</b>	<b>(0.13)</b>

Note. The PISA index of **disciplinary climate** was derived from students' reports on the frequency with which, in their mathematics lessons: *i*) students don't listen to what the teacher says; *ii*) there is noise and disorder; *iii*) the teacher has to wait a long time for students to <quieten down>; *iv*) students cannot work well; and *v*) students don't start working for a long time after the lesson begins. A four-point scale with the response categories "every lesson", "most lessons", "some lessons", and "never or hardly ever" was used. Positive values on this PISA 2000/2003 index indicate perceptions of a more positive disciplinary climate whereas low values indicate a more negative disciplinary climate.

Note. The results are based on the students' self-reports.



### 3.2 Benchmarking countries

Country	Index of disciplinary climate										Performance on the mathematics scale by national quarters of the index of disciplinary climate								Change in the mathematics score per unit of the index of disciplinary climate	Increased likelihood of students in the bottom quarter of the index of disciplinary climate distribution scoring in the bottom quarter of the national mathematics performance distribution	Explained variation in student performance (R <sup>2</sup> )			
	All students		Bottom quarter		Second quarter		Third quarter		Top quarter		Bottom quarter		Second quarter		Third quarter		Top quarter							
	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.	Mean score	S.E.	Mean index	S.E.	Mean index	S.E.	Mean score	S.E.						
	Change	S.E.	Ratio	S.E.	Percentage	S.E.																		
Australia	-0.01	(0.02)	-1.29	(0.01)	-0.34	(0.00)	0.25	(0.00)	1.32	(0.01)	498	(2.6)	514	(2.77)	532	(2.82)	560	(3.1)	21.01	(1.07)	1.63	(0.06)	5.34	(0.49)
Belgium	0.04	(0.02)	-1.26	(0.01)	-0.31	(0.01)	0.31	(0.01)	1.42	(0.02)	508	(3.7)	526	(3.76)	549	(2.83)	573	(3.2)	23.46	(1.57)	1.62	(0.09)	5.87	(0.71)
Canada	0.02	(0.01)	-1.18	(0.01)	-0.27	(0.00)	0.25	(0.00)	1.27	(0.01)	515	(2.5)	528	(2.31)	542	(2.26)	560	(2.4)	17.27	(0.92)	1.50	(0.06)	3.74	(0.40)
Denmark	-0.08	(0.02)	-1.18	(0.02)	-0.33	(0.01)	0.18	(0.00)	1.03	(0.02)	505	(3.8)	509	(3.89)	521	(4.02)	532	(4.0)	10.35	(2.07)	1.23	(0.08)	1.06	(0.43)
Finland	-0.15	(0.02)	-1.25	(0.01)	-0.43	(0.00)	0.09	(0.00)	0.99	(0.02)	533	(3.0)	539	(3.33)	546	(2.50)	561	(2.8)	10.36	(1.50)	1.35	(0.06)	1.28	(0.36)
Korea	0.12	(0.02)	-0.89	(0.01)	-0.11	(0.01)	0.28	(0.01)	1.18	(0.01)	521	(4.3)	540	(3.80)	554	(4.22)	554	(4.3)	14.70	(2.17)	1.47	(0.09)	1.76	(0.47)
Netherlands	-0.13	(0.03)	-1.26	(0.03)	-0.41	(0.01)	0.13	(0.01)	1.03	(0.02)	532	(4.2)	535	(5.15)	547	(4.50)	566	(4.0)	12.43	(2.36)	1.26	(0.09)	1.66	(0.61)
New Zealand	-0.17	(0.02)	-1.43	(0.02)	-0.47	(0.01)	0.12	(0.01)	1.12	(0.02)	501	(3.9)	518	(3.27)	530	(3.45)	555	(3.6)	17.86	(1.60)	1.60	(0.10)	3.52	(0.61)
Scotland	0.19	(0.04)	-1.26	(0.02)	-0.17	(0.01)	0.56	(0.01)	1.62	(0.03)	487	(4.4)	515	(3.96)	536	(3.88)	561	(3.6)	23.90	(2.05)	1.96	(0.17)	10.51	(1.72)
Sweden	-0.05	(0.03)	-1.13	(0.02)	-0.31	(0.01)	0.16	(0.01)	1.10	(0.03)	491	(4.1)	507	(2.98)	516	(3.14)	527	(4.3)	15.35	(2.09)	1.37	(0.09)	2.20	(0.60)
<b>OECD total</b>	<b>0.09</b>	<b>(0.01)</b>	<b>-1.17</b>	<b>(0.01)</b>	<b>-0.23</b>	<b>(0.00)</b>	<b>0.35</b>	<b>(0.00)</b>	<b>1.38</b>	<b>(0.01)</b>	<b>461</b>	<b>(1.6)</b>	<b>482</b>	<b>(1.43)</b>	<b>500</b>	<b>(1.26)</b>	<b>526</b>	<b>(1.3)</b>	<b>23.36</b>	<b>(0.65)</b>	<b>1.66</b>	<b>(0.04)</b>	<b>5.4</b>	<b>(0.27)</b>
<b>OECD average</b>	<b>0.00</b>	<b>(0.01)</b>	<b>-1.23</b>	<b>(0.00)</b>	<b>-0.33</b>	<b>(0.00)</b>	<b>0.23</b>	<b>(0.00)</b>	<b>1.28</b>	<b>(0.00)</b>	<b>480</b>	<b>(0.9)</b>	<b>493</b>	<b>(0.84)</b>	<b>508</b>	<b>(0.77)</b>	<b>530</b>	<b>(0.8)</b>	<b>18.27</b>	<b>(0.38)</b>	<b>1.47</b>	<b>(0.02)</b>	<b>3.4</b>	<b>(0.13)</b>

### 3.3 Summary of results

In all but the bottom quarter of the index, the disciplinary climate is above the OECD average. Mathematics performance of students at the bottom quarter of the index in Scotland is at OECD average, while performance exceeds the OECD average in the other quarters. The disciplinary climate in class, as reported by the students themselves, accounts for 10.5% of the variation in students' mathematics performance in Scotland, compared to an average of 3.4% in all OECD countries.

## 4. Students access to teachers

### 4.1 OECD countries

Country	Teachers in all domains					Mathematics teachers						
	Student-teacher ratio		Proportion of fully certified teachers		Proportion of teachers having an ISCED 5A qualification	Student-mathematics teacher ratio		Proportion of mathematics teachers		Proportion of mathematics teachers having an ISCED 5A qualification with major in mathematics		
<b>OECD Countries</b>												
Australia	13.5	(0.2)	0.99	(0.00)	0.83	(0.02)	88.6	(1.4)	0.17	(0.00)	0.61	(0.02)
Austria	13.0	(0.5)	0.89	(0.01)	0.67	(0.03)	114.7	(5.8)	0.23	(0.02)	0.98	(0.01)
Belgium	9.4	(0.2)	0.93	(0.01)	0.37	(0.01)	83.1	(1.7)	0.13	(0.00)	0.35	(0.01)
Canada	17.0	(0.1)	0.99	(0.01)	0.93	(0.01)	134.4	(2.1)	0.15	(0.00)	0.74	(0.02)
Czech Republic	15.2	(0.2)	0.83	(0.02)	0.81	(0.01)	121.0	(3.9)	0.17	(0.01)	0.87	(0.02)
Denmark	11.3	(0.2)	0.89	(0.03)	0.94	(0.01)	35.4	(1.4)	0.36	(0.01)	0.63	(0.02)
Finland	10.8	(0.2)	0.93	(0.01)			68.8	(2.2)	0.17	(0.00)	0.50	(0.02)
France												
Germany	17.6	(0.3)	0.96	(0.01)	0.61	(0.06)	69.3	(2.0)	0.30	(0.01)	0.86	(0.02)
Greece	9.7	(0.2)	1.00	(0.00)	1.00	(0.00)	81.8	(2.5)	0.13	(0.00)	1.00	(0.00)
Hungary	10.3	(0.4)	0.95	(0.01)	0.95	(0.01)	87.7	(4.9)	0.14	(0.01)	0.97	(0.01)
Iceland	11.4	(0.0)	0.78	(0.00)	0.57	(0.00)	61.6	(0.5)	0.36	(0.00)	0.28	(0.00)
Ireland	14.3	(0.4)	0.98	(0.01)	0.97	(0.01)	87.9	(6.9)	0.20	(0.01)	0.88	(0.02)
Italy	10.0	(0.4)	0.94	(0.01)	0.06	(0.01)	86.8	(2.2)	0.13	(0.01)	0.74	(0.02)
Japan	14.0	(0.2)	0.98	(0.01)	0.49	(0.03)	127.6	(3.0)	0.13	(0.01)		
Korea	16.4	(0.1)	1.00	(0.00)	0.94	(0.02)	154.9	(3.0)	0.13	(0.01)	0.99	(0.00)
Luxembourg	10.3	(0.0)	0.88	(0.00)	0.48	(0.00)	100.8	(0.1)	0.11	(0.00)	0.66	(0.00)
Mexico												
Netherlands	15.4	(0.3)	0.85	(0.02)	0.10	(0.03)	144.6	(3.6)	0.11	(0.00)	0.31	(0.03)
New Zealand	16.5	(0.2)	0.93	(0.01)	0.19	(0.02)	125.8	(2.9)	0.15	(0.01)	0.58	(0.02)
Norway	10.3	(0.1)	0.96	(0.01)	0.45	(0.03)	35.2	(1.1)	0.34	(0.01)	0.43	(0.03)
Poland	13.3	(0.2)	0.98	(0.01)	0.91	(0.01)	111.2	(2.5)	0.13	(0.00)	0.76	(0.02)
Portugal	11.0	(0.5)	0.78	(0.02)	0.44	(0.03)	95.4	(2.3)	0.15	(0.02)	0.62	(0.02)
Scotland	12.5	(0.1)	0.99	(0.01)	0.91	(0.02)	119.8	(2.3)	0.11	(0.00)	0.92	(0.02)
Slovak Republic	14.8	(0.2)	0.56	(0.02)	0.49	(0.02)	120.8	(3.7)	0.15	(0.01)	0.92	(0.01)
Spain	13.6	(0.3)	1.00	(0.00)	0.05	(0.00)	122.8	(4.4)	0.17	(0.01)	0.59	(0.02)
Sweden	12.4	(0.3)	0.87	(0.01)	0.40	(0.04)	61.0	(3.0)	0.26	(0.01)	0.62	(0.02)
Switzerland	12.6	(0.4)	0.88	(0.02)	0.58	(0.03)	50.3	(2.8)	0.36	(0.01)	0.56	(0.05)
Turkey	21.8	(1.5)	0.69	(0.11)	0.98	(0.01)	171.1	(9.0)	0.15	(0.01)	0.98	(0.02)
United States	15.7	(0.3)	0.93	(0.01)			125.1	(2.5)	0.14	(0.01)	0.85	(0.01)
<b>OECD total</b>	15.0	(0.1)	0.94	(0.00)	0.68	(0.01)	117.6	(0.9)	0.16	(0.00)	0.81	(0.01)
<b>OECD average</b>	13.4	(0.1)	0.91	(0.00)	0.67	(0.00)	100.9		0.19		0.74	

Note. School principals reported the number of full-time and part-time teachers in total, of full-time and part-time teachers fully certified by <the appropriate authority>, of full-time and part-time teachers with an <ISCED 5A> (university-level tertiary education) qualification in <pedagogy>. From this an index of **total student-teacher** ratio is obtained by dividing the school size by the total number of teachers. The number of part-time teachers contributes 0.5 and the number of full-time teachers contributes 1.0 to the total number of teachers.

### 4.2 Benchmarking countries

Country	Teachers in all domains					Mathematics teachers						
	Student-teacher		Proportion of fully		Proportion of	Student-		Proportion of		Proportion of		
Australia	13.5	(0.2)	0.99	(0.00)	0.83	(0.02)	88.6	(1.4)	0.17	(0.00)	0.61	(0.02)
Belgium	9.4	(0.2)	0.93	(0.01)	0.37	(0.01)	83.1	(1.7)	0.13	(0.00)	0.35	(0.01)
Canada	17.0	(0.1)	0.99	(0.01)	0.93	(0.01)	134.4	(2.1)	0.15	(0.00)	0.74	(0.02)
Denmark	11.3	(0.2)	0.89	(0.03)	0.94	(0.01)	35.4	(1.4)	0.36	(0.01)	0.63	(0.02)
Finland	10.8	(0.2)	0.93	(0.01)			68.8	(2.2)	0.17	(0.00)	0.50	(0.02)
Korea	16.4	(0.1)	1.00	(0.00)	0.94	(0.02)	154.9	(3.0)	0.13	(0.01)	0.99	(0.00)
Netherlands	15.4	(0.3)	0.85	(0.02)	0.10	(0.03)	144.6	(3.6)	0.11	(0.00)	0.31	(0.03)
New Zealand	16.5	(0.2)	0.93	(0.01)	0.19	(0.02)	125.8	(2.9)	0.15	(0.01)	0.58	(0.02)
Scotland	12.5	(0.1)	0.99	(0.01)	0.91	(0.02)	119.8	(2.3)	0.11	(0.00)	0.92	(0.02)
Sweden	12.4	(0.3)	0.87	(0.01)	0.40	(0.04)	61.0	(3.0)	0.26	(0.01)	0.62	(0.02)
<b>OECD total</b>	15.0	(0.1)	0.94	(0.00)	0.68	(0.01)	117.6	(0.9)	0.16	(0.00)	0.81	(0.01)
<b>OECD average</b>	13.4	(0.1)	0.91	(0.00)	0.67	(0.00)	100.9		0.19		0.74	

### 4.3 Summary of results

Scotland is above the OECD average in all variables but one: The proportion of mathematics teachers is lower in Scotland than in the OECD countries on average.

## 5. Index of the quality of the schools' educational resources and performance on the mathematics scale, by national quarters of the index

### 5.1 OECD countries

Country	Index of the quality of the schools' educational resources										Performance on the mathematics scale by quarters of the index of the quality of the schools' educational resources								Change in the mathematics score per unit of the index of the quality of the schools' educational resources		Increased likelihood of students in the bottom quarter of the index of the quality of the schools' educational resources distribution scoring in the bottom quarter of the national mathematics performance distribution		Explained variation in student performance (R <sup>2</sup> )	
	All students		Bottom quarter		Second quarter		Third quarter		Top quarter		Bottom quarter		Second quarter		Third quarter		Top quarter		Change	S.E.	Ratio	S.E.	Percentage	S.E.
	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.	Mean score	S.E.	Mean index	S.E.	Mean score	S.E.								
<b>OECD Countries</b>																								
Australia	0.57	(0.07)	-0.57	(0.03)	0.16	(0.02)	0.73	(0.02)	1.97	(0.04)	517	(5.1)	509	(6.49)	526	(4.87)	545	(4.6)	13.52	(2.40)	1.16	(0.10)	1.93	(0.69)
Austria	0.35	(0.08)	-0.78	(0.07)	0.06	(0.03)	0.56	(0.02)	1.56	(0.08)	503	(9.6)	517	(8.82)	503	(9.59)	497	(8.1)	-1.63	(5.77)	1.05	(0.18)	0.03	(0.34)
Belgium	0.19	(0.06)	-0.98	(0.07)	-0.18	(0.02)	0.43	(0.02)	1.49	(0.06)	523	(7.3)	519	(9.09)	534	(9.42)	544	(8.2)	7.56	(4.11)	1.01	(0.13)	0.45	(0.48)
Canada	-0.04	(0.04)	-1.07	(0.04)	-0.39	(0.01)	0.12	(0.01)	1.17	(0.06)	530	(3.3)	528	(3.51)	532	(4.48)	540	(4.3)	5.66	(2.13)	1.05	(0.07)	0.35	(0.28)
Czech Republic	-0.05	(0.06)	-0.83	(0.03)	-0.33	(0.01)	0.08	(0.01)	0.89	(0.08)	512	(6.6)	519	(7.33)	524	(8.60)	509	(10.1)	1.44	(6.74)	1.04	(0.15)	0.02	(0.24)
Denmark	0.04	(0.07)	-0.89	(0.05)	-0.21	(0.02)	0.19	(0.01)	1.05	(0.10)	501	(5.8)	517	(4.69)	521	(4.70)	518	(5.3)	6.00	(4.12)	1.26	(0.12)	0.28	(0.38)
Finland	-0.02	(0.06)	-0.83	(0.06)	-0.25	(0.02)	0.13	(0.01)	0.85	(0.09)	546	(3.9)	546	(3.88)	542	(3.17)	543	(3.6)	0.22	(2.74)	0.91	(0.07)	0.00	(0.05)
France																								
Germany	0.20	(0.07)	-0.88	(0.06)	-0.09	(0.02)	0.32	(0.02)	1.46	(0.08)	479	(11.0)	502	(8.69)	519	(11.26)	513	(10.9)	11.04	(6.45)	1.56	(0.25)	0.98	(1.16)
Greece	-0.46	(0.12)	-1.76	(0.14)	-0.79	(0.04)	-0.16	(0.03)	0.87	(0.15)	430	(9.4)	446	(11.19)	437	(10.80)	467	(8.8)	9.31	(5.75)	1.24	(0.21)	1.13	(1.34)
Hungary	0.09	(0.08)	-0.93	(0.07)	-0.15	(0.01)	0.25	(0.02)	1.19	(0.09)	481	(8.3)	487	(9.38)	476	(10.51)	519	(10.0)	11.06	(7.27)	1.07	(0.18)	1.02	(1.28)
Iceland	0.30	(0.00)	-0.78	(0.00)	-0.07	(0.00)	0.42	(0.00)	1.62	(0.01)	512	(3.2)	520	(3.56)	513	(3.53)	518	(3.1)	1.50	(1.46)	1.05	(0.07)	0.03	(0.04)
Ireland	-0.06	(0.08)	-1.05	(0.06)	-0.35	(0.03)	0.05	(0.02)	1.12	(0.12)	503	(5.4)	508	(5.84)	501	(6.02)	501	(7.5)	-1.76	(4.09)	0.98	(0.12)	0.04	(0.19)
Italy	0.14	(0.07)	-1.08	(0.08)	-0.16	(0.02)	0.38	(0.02)	1.40	(0.07)	440	(9.3)	469	(9.12)	478	(7.33)	477	(8.4)	14.40	(4.22)	1.69	(0.25)	2.21	(1.23)
Japan	0.01	(0.10)	-1.24	(0.11)	-0.35	(0.03)	0.22	(0.02)	1.39	(0.11)	521	(12.9)	534	(11.92)	554	(9.66)	527	(12.8)	5.59	(6.20)	1.25	(0.24)	0.36	(0.88)
Korea	0.57	(0.05)	-0.33	(0.06)	0.29	(0.02)	0.65	(0.02)	1.67	(0.07)	522	(3.3)	549	(8.15)	546	(7.70)	552	(7.7)	14.71	(4.53)	1.48	(0.19)	1.63	(1.03)
Luxembourg	0.15	(0.00)	-0.55	(0.00)	-0.04	(0.00)	0.38	(0.00)	0.80	(0.00)	518	(2.6)	465	(3.51)	508	(3.03)	481	(2.6)	-18.88	(2.04)	0.55	(0.04)	1.28	(0.27)
Mexico	-0.40	(0.09)	-1.83	(0.06)	-0.83	(0.02)	-0.11	(0.03)	1.16	(0.11)	369	(6.9)	375	(5.68)	388	(5.52)	406	(10.1)	15.08	(3.29)	1.42	(0.20)	4.37	(2.10)
Netherlands	0.51	(0.06)	-0.50	(0.07)	0.18	(0.03)	0.68	(0.02)	1.67	(0.08)	509	(11.2)	551	(10.43)	532	(10.45)	554	(9.0)	14.48	(6.62)	1.72	(0.33)	1.89	(1.65)
New Zealand	0.27	(0.06)	-0.80	(0.04)	-0.17	(0.02)	0.38	(0.02)	1.68	(0.06)	502	(5.9)	533	(5.22)	527	(6.18)	536	(5.9)	11.05	(3.01)	1.48	(0.16)	1.20	(0.63)
Norway	-0.29	(0.05)	-1.02	(0.04)	-0.48	(0.01)	-0.19	(0.01)	0.51	(0.08)	493	(4.7)	496	(4.34)	494	(4.64)	495	(4.7)	1.63	(3.68)	0.96	(0.08)	0.02	(0.08)
Poland	-0.66	(0.06)	-1.67	(0.08)	-0.88	(0.02)	-0.48	(0.02)	0.41	(0.09)	481	(5.5)	486	(5.19)	496	(4.91)	498	(6.1)	5.88	(3.14)	1.11	(0.10)	0.31	(0.30)
Portugal	-0.05	(0.07)	-1.05	(0.06)	-0.35	(0.02)	0.07	(0.02)	1.12	(0.11)	470	(7.0)	456	(8.85)	472	(9.26)	466	(7.0)	1.49	(4.19)	0.89	(0.15)	0.02	(0.19)
Scotland	0.53	(0.09)	-0.44	(0.05)	0.06	(0.02)	0.64	(0.04)	1.87	(0.09)	514	(6.5)	529	(8.66)	528	(6.54)	525	(6.2)	2.23	(3.91)	1.26	(0.16)	0.06	(0.22)
Slovak Republic	-0.76	(0.06)	-1.64	(0.05)	-0.95	(0.01)	-0.56	(0.02)	0.12	(0.07)	480	(8.0)	502	(8.19)	503	(6.58)	509	(7.0)	10.32	(7.37)	1.42	(0.18)	0.64	(0.84)
Spain	-0.13	(0.07)	-1.36	(0.06)	-0.44	(0.03)	0.19	(0.03)	1.09	(0.07)	467	(7.5)	485	(7.15)	494	(4.64)	494	(6.0)	11.20	(4.16)	1.47	(0.17)	1.52	(1.12)
Sweden	0.06	(0.07)	-0.97	(0.08)	-0.25	(0.02)	0.28	(0.02)	1.19	(0.09)	511	(4.4)	501	(5.20)	504	(5.40)	520	(5.1)	3.77	(2.59)	0.92	(0.08)	0.13	(0.17)
Switzerland	0.53	(0.07)	-0.46	(0.11)	0.28	(0.01)	0.63	(0.02)	1.68	(0.08)	525	(9.3)	511	(7.54)	530	(5.88)	539	(10.6)	6.61	(5.39)	1.07	(0.15)	0.36	(0.64)
Turkey	-1.37	(0.09)	-2.52	(0.11)	-1.70	(0.02)	-1.15	(0.03)	-0.13	(0.12)	403	(12.8)	430	(11.31)	427	(11.56)	434	(14.6)	16.48	(9.67)	1.43	(0.25)	2.33	(2.72)
United States	0.53	(0.08)	-0.77	(0.05)	0.03	(0.02)	0.77	(0.03)	2.10	(0.03)	471	(6.2)	488	(6.73)	478	(7.27)	507	(7.9)	10.97	(3.48)	1.36	(0.14)	1.66	(1.08)
<b>OECD total</b>	<b>0.06</b>	<b>(0.03)</b>	<b>-1.28</b>	<b>(0.03)</b>	<b>-0.32</b>	<b>(0.01)</b>	<b>0.30</b>	<b>(0.01)</b>	<b>1.54</b>	<b>(0.03)</b>	<b>458</b>	<b>(3.4)</b>	<b>488</b>	<b>(3.09)</b>	<b>504</b>	<b>(2.48)</b>	<b>506</b>	<b>(3.4)</b>	<b>17.20</b>	<b>(1.78)</b>	<b>1.71</b>	<b>(0.09)</b>	<b>3.4</b>	<b>(0.70)</b>
<b>OECD average</b>	<b>0.00</b>	<b>(0.01)</b>	<b>-1.21</b>	<b>(0.02)</b>	<b>-0.31</b>	<b>(0.00)</b>	<b>0.23</b>	<b>(0.01)</b>	<b>1.28</b>	<b>(0.02)</b>	<b>476</b>	<b>(1.8)</b>	<b>501</b>	<b>(1.73)</b>	<b>507</b>	<b>(1.46)</b>	<b>515</b>	<b>(1.8)</b>	<b>15.90</b>	<b>(1.04)</b>	<b>1.52</b>	<b>(0.04)</b>	<b>2.5</b>	<b>(0.34)</b>

Note. The PISA index of the *quality of the school's educational resources* was derived from seven items measuring the school principals' perceptions of potential factors hindering instruction at school: *i)* instructional materials (e.g. textbooks); *ii)* computers for instruction; *iii)* computer software for instruction; *iv)* calculators for instruction; *v)* library materials; *vi)* audio-visual resources; and *vii)* science laboratory equipment and materials. A four-point scale with the response categories "not at all", "very little", "to some extent", and "a lot" was used. All items were inverted for scaling and positive values indicate positive evaluations of this aspect.

Note. The results are based on reports from school principals and reported proportionate to the number of 15-year-olds enrolled in the school.

## 5.2 Benchmarking countries

Country	Index of the quality of the schools' educational resources										Performance on the mathematics scale by quarters of the index of the quality of the schools' educational resources										Change in the mathematics score per unit of the index of the quality of the schools' educational resources		Increased likelihood of students in the bottom quarter of the index of the quality of the schools' educational resources distribution scoring in the bottom quarter of the national mathematics performance distribution		Explained variation in student performance (R <sup>2</sup> )	
	All students		Bottom quarter		Second quarter		Third quarter		Top quarter		Bottom quarter		Second quarter		Third quarter		Top quarter									
	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.	Mean score	S.E.	Mean index	S.E.	Mean index	S.E.	Mean score	S.E.								
	Change	S.E.	Ratio	S.E.	Percentage	S.E.																				
Australia	0.57	(0.07)	-0.57	(0.03)	0.16	(0.02)	0.73	(0.02)	1.97	(0.04)	517	(5.1)	509	(6.49)	526	(4.87)	545	(4.6)	13.52	(2.40)	1.16	(0.10)	1.93	(0.69)		
Belgium	0.19	(0.06)	-0.98	(0.07)	-0.18	(0.02)	0.43	(0.02)	1.49	(0.06)	523	(7.3)	519	(9.09)	534	(9.42)	544	(8.2)	7.56	(4.11)	1.01	(0.13)	0.45	(0.48)		
Canada	-0.04	(0.04)	-1.07	(0.04)	-0.39	(0.01)	0.12	(0.01)	1.17	(0.06)	530	(3.3)	528	(3.51)	532	(4.48)	540	(4.3)	5.66	(2.13)	1.05	(0.07)	0.35	(0.28)		
Denmark	0.04	(0.07)	-0.89	(0.05)	-0.21	(0.02)	0.19	(0.01)	1.05	(0.10)	501	(5.8)	517	(4.69)	521	(4.70)	518	(5.3)	6.00	(4.12)	1.26	(0.12)	0.28	(0.38)		
Finland	-0.02	(0.06)	-0.83	(0.06)	-0.25	(0.02)	0.13	(0.01)	0.85	(0.09)	546	(3.9)	546	(3.88)	542	(3.17)	543	(3.6)	0.22	(2.74)	0.91	(0.07)	0.00	(0.05)		
Korea	0.57	(0.05)	-0.33	(0.06)	0.29	(0.02)	0.65	(0.02)	1.67	(0.07)	522	(9.3)	549	(8.15)	546	(7.70)	552	(7.7)	14.71	(4.63)	1.48	(0.19)	1.63	(1.03)		
Netherlands	0.51	(0.06)	-0.50	(0.07)	0.18	(0.03)	0.68	(0.02)	1.67	(0.08)	509	(11.2)	551	(10.43)	532	(10.45)	554	(9.0)	14.48	(6.62)	1.72	(0.33)	1.89	(1.65)		
New Zealand	0.27	(0.06)	-0.80	(0.04)	-0.17	(0.02)	0.38	(0.02)	1.68	(0.06)	502	(5.9)	533	(5.22)	527	(6.18)	536	(5.9)	11.05	(3.01)	1.48	(0.16)	1.20	(0.63)		
Scotland	0.53	(0.09)	-0.44	(0.05)	0.06	(0.02)	0.64	(0.04)	1.87	(0.09)	514	(6.5)	529	(8.66)	528	(6.54)	525	(6.2)	2.23	(3.91)	1.26	(0.16)	0.06	(0.22)		
Sweden	0.06	(0.07)	-0.97	(0.08)	-0.25	(0.02)	0.28	(0.02)	1.19	(0.09)	511	(4.4)	501	(5.20)	504	(5.40)	520	(5.1)	3.77	(2.59)	0.92	(0.08)	0.13	(0.17)		
<b>OECD total</b>	<b>0.06</b>	<b>(0.03)</b>	<b>-1.28</b>	<b>(0.03)</b>	<b>-0.32</b>	<b>(0.01)</b>	<b>0.30</b>	<b>(0.01)</b>	<b>1.54</b>	<b>(0.03)</b>	<b>458</b>	<b>(3.4)</b>	<b>488</b>	<b>(3.09)</b>	<b>504</b>	<b>(2.48)</b>	<b>506</b>	<b>(3.4)</b>	<b>17.20</b>	<b>(1.78)</b>	<b>1.71</b>	<b>(0.09)</b>	<b>3.4</b>	<b>(0.70)</b>		
<b>OECD average</b>	<b>0.00</b>	<b>(0.01)</b>	<b>-1.21</b>	<b>(0.02)</b>	<b>-0.31</b>	<b>(0.00)</b>	<b>0.23</b>	<b>(0.01)</b>	<b>1.28</b>	<b>(0.02)</b>	<b>476</b>	<b>(1.8)</b>	<b>501</b>	<b>(1.73)</b>	<b>507</b>	<b>(1.46)</b>	<b>515</b>	<b>(1.8)</b>	<b>15.90</b>	<b>(1.04)</b>	<b>1.52</b>	<b>(0.04)</b>	<b>2.5</b>	<b>(0.34)</b>		

## 5.3 Summary of results

The quality of the schools' educational resources as reported by school principals is markedly higher in Scotland than on OECD average, in all quarters of the index. The average performance on the mathematics scale does not differ over the quarters of the index. The quality of the schools' educational resources accounts for 0.06% of the variation of student performance in Scotland, compared to 2.5% on OECD average.