

POLICY INSTITUTE

How Good Are Scotland's Schools?

The evidence from home and abroad

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Synopsis

Scotland will require an excellent education system to maximise opportunities in the globalised economy. Lack of easy comparison makes it hard for citizens to judge Executive claims that Scottish education is among the best in the world. Despite a huge increase in funding, key exam pass rates at S4 have not improved under devolution from an inadequate level. There also appears to be a long 'tail' of underachievers in literacy, numeracy, exclusions, additional support needs, truancy and classroom behaviour.

In international studies, Scots pupils have done well in recent OECD surveys, but poorly in others. Issues of sampling, comparison and interpretation mean these are an unreliable guide to performance. In exam passes, Scotland is being overtaken by England. The Executive should set out plans to double attainment. It should also seek to measure satisfaction among parents, employers and teachers more systematically.

POLICY INSTITUTE

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Introduction – ready for the 21st Century?

“Scottish education is among the best performing in the world - the Executive’s ambition is to make it the best.”

Scottish Executive web site

This statement, typical of government pronouncements on education in Scotland¹, seems at odds with the gloomy picture that is often painted of Scottish schools in the media².

Does Scotland currently have one of the best performing education systems in the world, as the Executive suggests? What is the real state of school education in Scotland today and is it fit and ready to meet the challenges of the 21st Century?

The purpose of this paper is to seek an answer to these questions. It does not recommend particular policies, but assesses the available evidence as to what is appearance and what reality in the performance of Scotland’s state schools.

This is an important task, and must be the foundation on which further policy work³ can be undertaken. Unless we understand how good our schools really are, we cannot judge the requirement for reform.

The OECD’s⁴ Director of Education, Barbara Ischinger, recently outlined some of the ‘phenomenal changes’ now facing education systems in countries such as Scotland:

“All work that can be digitised, atomised and outsourced can increasingly be done by the most effective and competitive individuals or enterprises, wherever they are located. . . . The

¹ The Labour Party web site states similarly: “Our education system is amongst the best in the world and only three countries outperform us in maths, literacy and science”.

² There are certainly many groups that might have an interest in doing down our schools, contributing to a sense of decline – journalists seeking a story, opposition politicians, teachers themselves seeking more resources, or even think-tanks looking for something to study.

³ In 2004 the Policy Institute published *Setting Schools Free* by Frank Gerstenberg, which alluded to a number of domestic and international comparisons before advocating greater independence for schools and parental choice. Since then further studies have been published on the performance of Scottish schools, leading if anything to greater uncertainty on the subject. This question thus merits study as a stand-alone topic.

⁴ Organisation for Economic Co-operation and Development. A group of 30 democratic, market-oriented countries.

impact of these developments on OECD countries and their education systems was magnified by the collapse of communism in the Soviet Union, India's turn away from economic insularism, and China's shift to market capitalism. ...This has allowed three to four billion people in places like China, India, the Russian Federation, Eastern Europe, Latin America and Central Asia, that previously been locked out of the global economy ... to collaborate and compete with everyone else.”⁵

While Scotland already has to compete with countries offering a relatively cheap and low-skilled labour force, countries such as China and India have also begun rapidly to expand their supply of high level qualifications, delivering high skills at moderate cost at an ever increasing pace. OECD countries' capacity to compete in the global knowledge economy will therefore increasingly depend on whether they can meet the fast-growing demand for high level skills. This in turn will hinge on significant improvements in the quality of schooling outcomes.

Hard to measure success

The nature of education makes it difficult for the public to assess the truth behind different claims as to its quality. Most people only experience a couple of schools first hand in their lifetime. There is little exposure to foreign education systems among the populace. And the state monopoly on schools in Scotland means that, except for a wealthy few⁶, there is no market comparison allowed between different purveyors at home, as there is in most other services or goods.

This absence of easy comparison leaves us reliant on government statistics and academic studies of school and pupil performance⁷. Some of this is wildly contradictory, and can in isolation be misleading.

This paper therefore takes an overview of the limited evidence that is available, and investigates whether concrete conclusions

⁵ See the editorial to the 2006 *Education at a Glance*, OECD.

⁶ Who can afford to forgoe their childrens' tax-funded entitlement to schooling and pay again in the private sector. 4.2% of pupils attend privately funded schools, rising to c 6% at secondary level (Scottish Council of Independent Schools).

⁷ This paper relies largely on examination, test and other statistical data. It does not pretend that these should be the only measure of educational performance. Statistics are notoriously easy to manipulate, especially when describing a complex human activity like education. But they are the only ones readily available for comparison across the board. The fact that neither the opinions of parents, who are ultimately responsible for their children's' education, nor employers play a major role in the debate about the quality of Scottish education is a serious concern.

can be drawn from it, before suggesting how the Executive can fruitfully use and improve upon it.

As in any industry, it is never enough to assess just the domestic product. Variations, trends and performance should be set as far as possible in an international context – especially so where there is a domestic monopoly. Relative performance over time and place is as important as absolute performance.

A financial bonanza

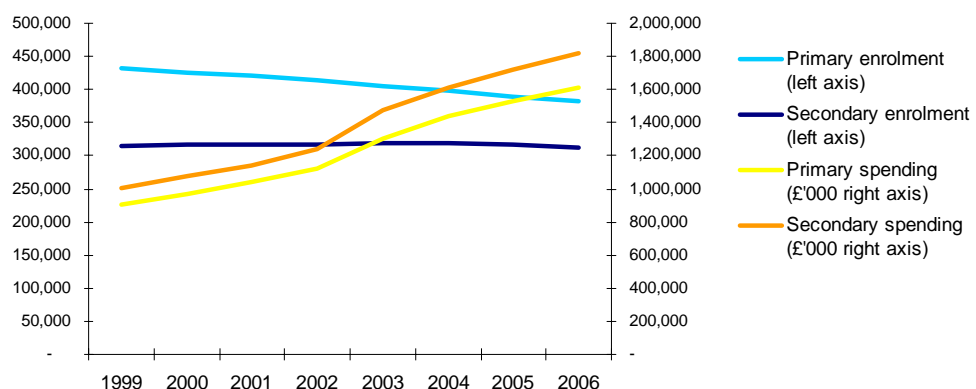
This paper is concerned with *outputs* – how pupils turn out after education in our schools. Education *policy* is for another day. It therefore disregards most inputs such as teacher numbers, class sizes, the use of computers and so on.

However, we cannot ignore the financial cost of schooling. Whether an effective tool of policy or not, spending more money on schools has an economic opportunity cost and thus affects the relative performance of our schools in value for money terms.

Since 1999, there has been a steady increase in funding of some 50% across all areas of education⁸ in Scotland. Meanwhile, there has been a reduction in the number of primary schools (109) and primary enrolment (48,631), and a smaller decrease in the number of secondary schools (8) and secondary enrolment (2,377). These figures are highlighted below:

Financial bonanza

Enrolment and gross spending in primary and secondary schools



Source: Scottish Executive Statistics

This means that the increase in funding has not been prompted by any rise in demand for education in Scotland. On the

⁸ To £4.4bn in 2005/6, including spending on special schools, pre-primary education and non-school funding.

contrary, funding per pupil has risen markedly between 1999 and 2006, doubling in the case of primary pupils to £4,138 a year. It has increased by 80%⁹ for secondary school students to £5,813 a year.

Domestic impressions

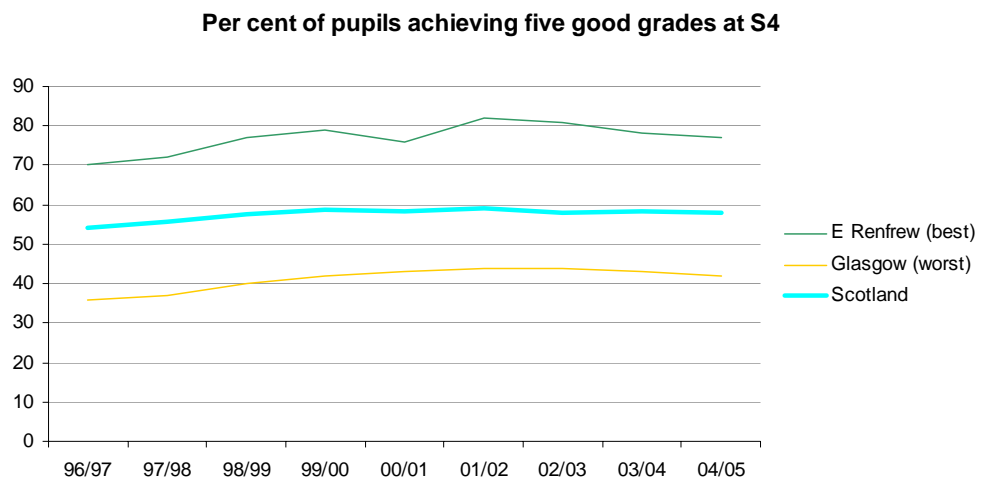
How have Scottish schools performed during this period?

Exam passes

The key group to look at over time is S4 pupils – i.e. those in their 4th year of secondary school. This covers almost all pupils at the end of their compulsory schooling, and so captures the end product of this main period of their education.

The following chart shows the percentage of all S4 pupils who achieved five or more good grades¹⁰ between 1996/97 and 2004/05, with the best and worst performing local authorities.

Limited improvement on one measure...



Source: *Scottish Executive Education Department*

While the majority of authorities experienced a moderate increase, six authorities actually experienced a decline¹¹.

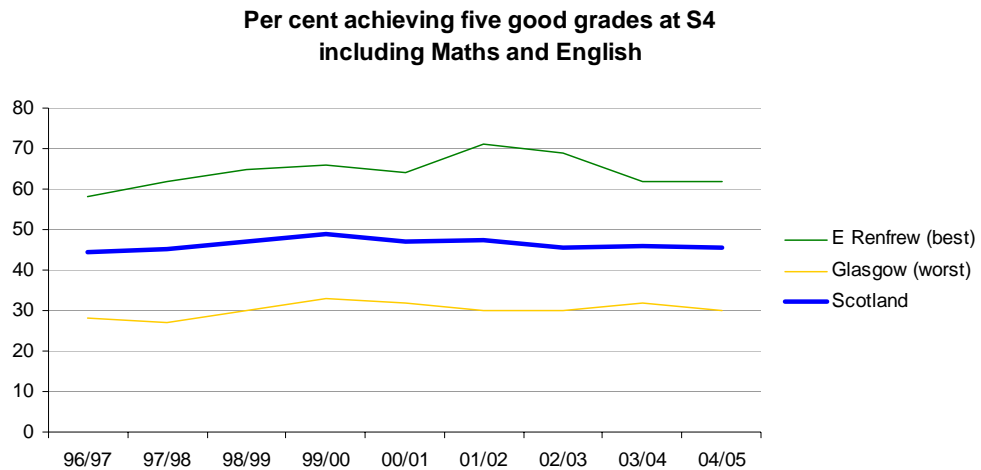
A more revealing measure of performance¹² is the number of S4 pupils obtaining five or more good grades, **including Maths and English:**

⁹ In nominal terms, not taking inflation into account.

¹⁰ Defined as Standard grades 1-3, Intermediate-2 A-C or Intermediate-1 A only. The equivalent in England is GCSE grades A-C.

¹¹ Falkirk, Scottish Borders, Moray, Highland, Fife, and South Lanarkshire.

...No improvement on the stricter measure



Source: Scottish Executive Education Department

In only nine of the thirty-two authorities are more than 50% of children achieving five good grades. Since 1999, fourteen local authorities¹³ have actually experienced a decline or no change in the percentage of children obtaining them.

The following table shows how the best and worst performers have fared. Full results for all authorities are in the Appendix.

**Percent of pupils achieving 5 good grades including Maths
and English at S4 in top 5 and bottom 5 performing councils**

Top 5	'04/'05	'96/'97	Bottom 5	'04/'05	'96/'97
E Renfrew.	62	58	Glasgow	30	28
Orkney	62	57	Dundee	34	32
Shetland	61	56	Midlothian	35	40
E Dunbarton.	60	57	N Lanark.	37	38
Aberdeenshire	55	57	W Dunbarton.	38	35

Source: Scottish Executive Education Department

A number of reports published by the Scottish Executive and Her Majesty's Inspectorate of Education (HMIe)¹⁴ help to shed

¹² I.e. that includes subjects of most concern to future employers and reduces incentives for schools to encourage 'easy' subjects. This is becoming the base measure of pupil attainment at this level.

¹³ Aberdeenshire, Dumfries & Galloway, East Ayrshire, Eilean Siar, Falkirk, Fife, Midlothian, Moray, North Lanarkshire, Perth & Kinross, Scottish Borders, South Ayrshire, South Lanarkshire and Stirling.

¹⁴ "HM Inspectorate of Education (HMIe) in Scotland is an Executive Agency of the Scottish Ministers under the terms of the Scotland Act 1998. As an agency, we operate independently and impartially whilst remaining directly accountable to Ministers for the standards of our work. This status guarantees the independence of our inspection, review

more light on some of the issues facing the system of state school education in Scotland.

Performance across the board

In February 2006, HMIe published a report *Improving Scottish Education*¹⁵ based on their inspections of both schools and local authorities over the previous four years. The report found considerable differences in performance between the thirty-two education authorities and unacceptable differences in the quality of teaching within individual schools. According to HM Senior Chief Inspector Graham Donaldson:

“There is considerable variation in performance across education authorities and some have much work to do to match the standards of the best. As yet, we have not seen sufficient improvement in leadership overall. We are still reporting important weaknesses in leadership across all formal education sectors with 15% of head teachers attaining ‘unsatisfactory’ or just ‘fair’ standards which were not good enough.”

The report concludes by highlighting the importance of developing an education system ‘which is itself responsive and flexible and which is open to new ideas and new approaches to learning and teaching’.

A November 2006 HMIe report *Improving Scottish Education: Effectiveness of Education Authorities*¹⁶ is the first complete picture of all of Scotland’s thirty-two education authorities. Inspectors said that while some were making a real difference to their schools most were just meeting basic requirements.

The report also said that in more than a quarter of councils the work of staff was only fair, and a quarter were judged only fair or unsatisfactory when it came to managing money and other resources.

The survey found that just ten education bodies had sustained high quality leaders over the years, while nine authorities were judged to have major or important weaknesses in this regard. Scottish Borders was the worst overall performer, with 40% of its indicators receiving the bottom grade.

and reporting within the overall context of the Minister’s strategic objectives for the Scottish education system.” See www.hmie.gov.uk.

¹⁵ www.hmie.gov.uk/documents/publication/hmieise.pdf.

¹⁶ www.hmie.gov.uk/documents/publication/iseeca.pdf.

The gap between best and worst pupils

A January 2006 HMIE report titled *Missing Out*¹⁷, suggests that the gap between the best and worst performing pupils in Scotland is growing. The report also found a widening gap in primary schools in benchmark reading, writing and maths standards.

Numeracy and literacy

According to figures published in December 2005¹⁸, thousands of high school pupils in Scotland had failed to reach basic standards in literacy and numeracy. Data obtained under the Freedom of Information Act indicated that more than 30% of second year pupils had poor results in reading. Nearly half failed the standards for writing while six in ten pupils achieved the basic standard for mathematics. Similar figures released in subsequent years showed scant improvement.

Exclusions

The latest statistics on exclusions from Scottish schools was published in December 2006 and shows that between 1999 and 2006 Scotland experienced an increase in school expulsions from 38,769 to 42,990. Of the exclusions 5,779 were from primary schools (the figure doubling in P1), 36,136 from secondary schools and 1,075 from special schools. Only eight of Scotland's thirty-two local education authorities experienced a decline in expulsions with the remaining twenty-four authorities all experiencing increases of varying degrees¹⁹.

Additional support

The following chart shows a steady increase in the number of pupils with 'additional support needs'²⁰ who are based in mainstream schools:

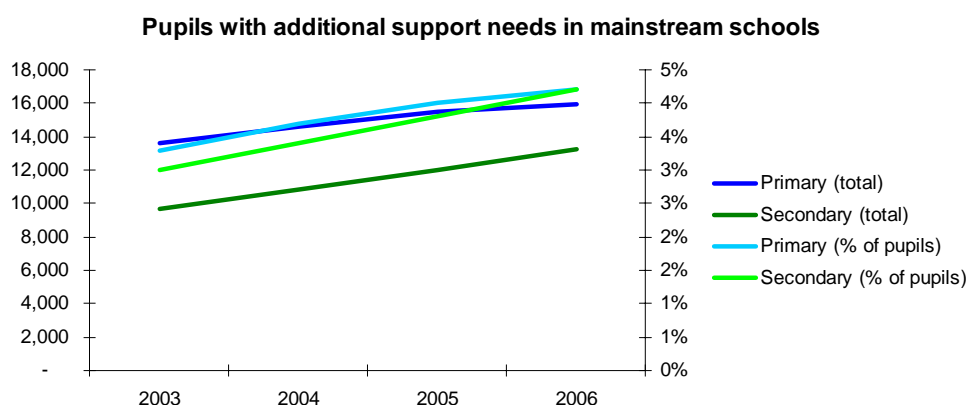
¹⁷ www.hmie.gov.uk/documents/publication/hmiemoeo.pdf .

¹⁸ See *Thousands of pupils fail basics*, BBC News web site, Dec 2005.

¹⁹ *Exclusions from Schools 2005/6*, Scottish Executive. The highest percentage increase can be found in Aberdeenshire which experienced more than a 250% increase from 463 to 1,175 over the period.

²⁰ Defined as any child or young person who, for whatever reason, requires additional support, long term or short term, in order to overcome barriers to learning.

Needing more help



Source: *Scottish Executive Statistics*

Truancy

The latest statistics on attendance and absence in Scottish schools were published in December 2006. The rate of attendance for primary schools remained at 95.0%. The rate for secondary schools was 90.4% (90.2% in 2004/05). The rate for special schools was 90.7% (91.0% in 2004/05). 79% of pupils (including S6) had an attendance rate of 90% or above, with 5% achieving a 100% attendance record.

About 20% were recorded as truanting at least once during 2005/06, with less than 10% of pupils responsible for 90% of time lost due to truancy.

Approximately 0.7% of days were lost due to truancy. This rate remains level for both girls and boys through primary levels at 0.3% (0.4% last year). It then rises steeply until reaching its peak at 1.8% in S4. Pupils registered for free school meals had a truancy rate four times that of other pupils in primary. This difference drops through secondary and reverses in S6. On any given day there is an estimated 5,000 children truanting.

Pupil behaviour

In October 2006 the National Foundation for Educational Research published a report on the nature and extent of pupil behaviour in Scotland's schools²¹. Data below represents reports by teachers of behaviour that occurred at least once in their classrooms during the one week period of the survey:

²¹ Anne Wilkin et al, NFER October 02, 2006. See www.scotland.gov.uk/Publications/.

Talking out of turn	98%
Hindering or distracting others	85%
Making unnecessary (non-verbal) noise	85%
Pupils leaving their seat without permission	81%
Pupil on pupil verbal abuse	60%
Pupil on pupil physical aggression	58%
Pupil on pupil physical violence	37%
Pupil on teacher verbal abuse	15%
Pupil on pupil sexist abuse	6%
Pupil on pupil racist abuse	5%
Pupil on teacher physical aggression	5%
Pupil on teacher physical violence	2%

Source: National Foundation for Educational Research

Commentary on domestic evidence

What do these various statistics tell us about the performance of Scottish schools?

There is certainly plenty of ammunition for the doom-sayers. There appears to be a consistent ‘tail’ of poor performance - a minority ranging from 5% to 30% that suffer from low skills, truancy, a requirement for special help, poor behaviour and so on. However, any analysis of school performance data must bear in mind three caveats:

1. Every statistic has at its root cause numerous different factors, some within the school and some from wider society. If, for example, family breakdown, drug use and criminality is on the increase in society, this might be reflected in certain statistics even in the finest school.
2. There is a considerable time lag before changes in government policy can affect the performance of schools. Current performance does not necessarily reflect current policy²².
3. A spectrum of achievement in schools is a natural part of human society. It is difficult to make judgements about the performance of Scottish schools in the absence of

²² Clearly this factor depends on the policy, how quickly it was implemented, and the extent to which pupils were exposed to it. Most current Scottish pupils have been at school exclusively under the current administration, and so will have been affected by changes implemented by it. However, the system as it stands also reflects the policies of previous governments going back to the introduction of comprehensive education, as well as the policies of local government (many of whose officials are now in the Scottish Parliament). It is impossible to be exact on this point, though presumably if the devolved administration’s policies were having an impact, it should be starting to show in the data.

international comparisons. Levels of poor achievement might look bad here, but could be excellent compared to the overall human experience.

Nonetheless, there are some features of the evidence which stand out.

- Performance does not seem to be improving. The data on qualifications, exclusions, requirements for additional support and truancy all show only minor improvements or even decline. The steep rise in spending on Scottish schools appears to have had no effect yet.
- In absolute terms the figures on pupils gaining five good qualifications at S4 are worrying²³. Is it enough that less than half achieve this (including Maths and English)? Will this stand Scotland in good stead in the global economy?

Such statistics can only give us an impression of the performance of schools. However, on the face of it, it would seem a surprise if this picture was of 'one of the best performing education systems in the world'. Could it really be that this performance is superlative by global standards?

International comparisons

Since the mid 1960s numerous international studies have been carried out comparing standards in education in different countries across the world. The fact that Scotland has often been included as a separate country allows for some comparisons and analysis to be made. In addition, in some circumstances it is possible to compare exam results with the rest of the UK.

International Association for the Evaluation of Educational Achievement (IEA) Studies

The first international study comparing education outcomes was carried out by the IEA in 1964.

The First and Second International Mathematics Studies (FIMS & SIMS) – 1964 and 1982/3

FIMS research questions related to the organisation of education, the curriculum, and methods of instruction. The study also examined how mathematics teaching and learning

²³ Even without considering allegations of 'grade inflation' and progressively easier exams. For example, some would argue that gaining an A at the new Intermediate 2 level should not be included in these statistics because it is too easy.

might be influenced by societal, scientific, and technological change.

The target populations included four categories of pupils: those aged thirteen at the date of testing; all pupils at the grade where the majority of pupils aged thirteen were found; and pre-university students divided into specialists and non-specialists. Overall, Scots students performed poorly, coming seventh, seventh, ninth and eighth out of twelve in the four categories, showing moreover a relative decline in performance as they got older.

In 1983 a similar study showed Scots students coming eighth out of twenty at the thirteen-year-old level, declining to eleventh out of fifteen at the pre-university level.

In both FIMS and SIMS a number of 'bridge' test items were included which provide a means of assessing changes between the two studies. These showed Scots thirteen-year-old students dropping from fifth to sixth out of ten and pre-university students dropping from third to seventh out of eight between 1964 and 1983.

Trends in International Mathematics and Science Study (TIMSS) 1995 and 2003

The IEA carried out two further studies in 1995 and 2003 testing pupils' knowledge and understanding of mathematics and science in their third and fourth grade, and also their seventh and eight grades of secondary school

Unfortunately, these are not comparable to the earlier studies. Nonetheless, Scotland's performance was poor, particularly in mathematics. For fourth grade students, among those fifteen countries that participated in both studies, Scots students declined from ninth to twelfth in maths and seventh to eleventh in science between the two studies²⁴.

Progress in International Reading Literacy Study (PIRLS-2001)

Thirty-five countries participated in the IEA's PIRLS 2001, which tested 150,000 pupils in their fourth grade (nine and ten-year-olds), and consists of a test assessing a range of reading comprehension strategies for two major reading purposes -

²⁴ The 1995 study showed that Scots pupils performed especially badly in truancy and the amount of homework set, and spent more time playing computer games and watching television than most others. See *Achievements of Primary 4 and Primary 5 Pupils in Maths and Science, TIMMS*, and *Achievements of Secondary 1 and Secondary 2 Pupils in Maths and Science, TIMMS*, Scottish Office 1996.

literary and informational. This study showed Scots students performing slightly above the average at fourteenth out of thirty-five.

The International Assessment of Educational Progress (IAEP) 1990

In addition to the IEA studies discussed above there have been two studies of mathematics²⁵ carried out by the Education Testing Services (ETS) based in the US. The second separated out Scottish results and tested children aged nine and thirteen. It showed Scots students scoring slightly above the average of those countries involved, though these included a large number of non-OECD countries²⁶.

Programme for International Student Assessment (PISA)

The Programme for International Student Assessment (PISA) is an important international study on education carried by the thirty OECD members, with Scotland treated separately (as are England & Wales and Northern Ireland). Studies have taken place in 2000, 2003 and 2006. The results of the 2006 study have not yet been published.

PISA 2000

The main purpose of PISA 2000 was to assess the knowledge and skills of fifteen-year-olds near the end of their compulsory education in three areas of literacy: reading, mathematics and science²⁷.

In Scotland over 2,500 tests and questionnaires were completed from a random sample of ninety-nine secondary schools (including private schools, but not special schools). In December 2001 the OECD published its first findings which showed that Scotland performed relatively well compared with other OECD countries. The mean score in each category is 500:

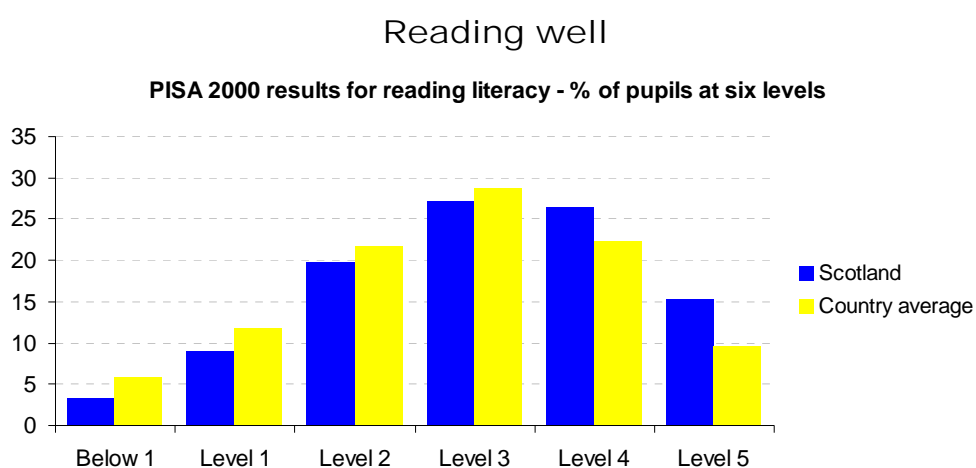
²⁵ Examining numbers and operations, measurement, geometry, data analysis, probability and statistics, and algebra and functions.

²⁶ Fourteen OECD countries were involved, plus Slovenia, the Soviet Union, Brazil, Israel, Jordan, China, Taiwan and Mozambique.

²⁷ Reading literacy was defined as the ability to understand, use and reflect on written texts to participate effectively in life. Mathematical literacy was defined as the ability to recognise, formulate and solve mathematical problems in situations encountered in life. Scientific literacy was defined as the capacity to acquire and use scientific knowledge and to draw evidence-based conclusions.

PISA 2000	Reading literacy	Maths literacy	Scientific literacy
Score (mean = 500)	526	533	522
Position (out of 30)	6 th	5 th =	10 th

In a departure from most international studies, PISA had a major emphasis on verbal literacy. The following graph shows the proportions of children in Scotland who performed at six different levels of proficiency²⁸ at reading:



Source: PISA Scottish Report, Scottish Executive

Only New Zealand, Finland, Australia, Canada, Northern Ireland and England had more students at 'level 5' of performance.

While 12.3% achieved only level 1 or below – after more than ten years of schooling – we can console ourselves that this is below the OECD average of 17.9%, though it is also important to recognise that countries such as Korea (5.7%) and Finland (6.9%) clearly suggest that it is possible to perform well without leaving a large number of children behind.

PISA 2003

In PISA 2003²⁹, the main subject assessed was mathematics, with reading and science also being looked at.

²⁸ Level 5 corresponds to a score of more than 625, Level 4 to scores in the range 553 to 625, Level 3 to scores from 481 to 552, Level 2 to scores from 408 to 480, and Level 1 to scores from 335 to 407. The study average is 500.

²⁹ Over 275,000 students took part in PISA 2003 from 41 participating countries (all 30 OECD countries and 11 non-OECD 'partner' countries). Although the UK as a whole failed to meet the sampling criteria for the study (meaning that its results are not reported in full) Scotland and Northern Ireland did, and their results are reported in an

Scotland took part in PISA 2003 as a separate ‘national centre’, meaning that it participated fully in all PISA activities as though it were a full country.

The school sample³⁰ was a randomly representative of all mainstream secondary schools in Scotland (local authority, grant-aided, and private schools). The following table summarises Scotland’s performance. Again, Scotland performed well, though slightly worse than in 2000:

PISA 2003	Reading literacy	Maths literacy	Scientific literacy
Score (mean = 500)	516	524	514
Position (out of 30)	6 th	8 th =	9 th

In mathematical literacy only Finland, Korea, and the Netherlands had mean scores that were significantly higher.

As well as assessing overall performance in mathematics, PISA 2003 assessed pupil performance in four ‘content areas’: *Space and shape* (geometry); *Change and relationships* (algebra); *Quantity* (those aspects of mathematics bearing upon number); and *Uncertainty* (probability and statistics)³¹.

Only in the first two is it possible to compare overall performance in mathematics in PISA 2000 and 2003. Performance could be compared across 25 countries and Scotland. Scotland showed a slight, though non-significant, drop in performance in the former, from 511 points to 507. Although Scotland’s mean score in the latter content area (529) is one of the highest in PISA 2003, this mean decreased from PISA 2000 by one point.

Comparing exam results with England

The exam results described in the previous section can be compared with the results from England at the equivalent level.

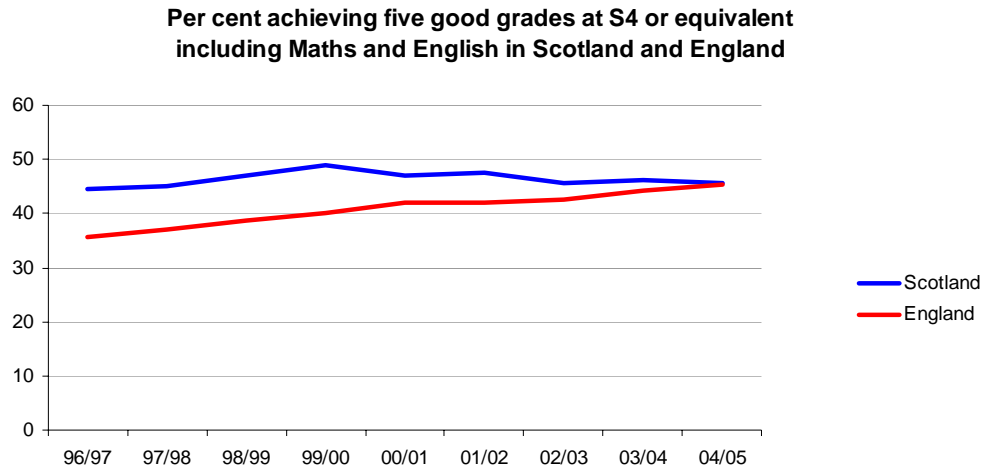
annex to the international report. Results are for Scotland and the twenty-nine OECD countries that met the criteria, and do not include results from the ‘partner countries’.

³⁰ Of the 108 Scottish schools that were recruited to the study, ninety-eight returned completed tests and questionnaires, a response rate of 90%. Just over 2,700 students completed tests and questionnaires.

³¹ Scottish students do particularly well in the content area of *Uncertainty*. Only one country had a score in this area that was significantly higher than Scotland’s. *Change and Relationships* is the next strongest area, with only two other countries having a higher score. In the other two areas, Scotland’s performance is good but not strong (nine countries have a score that is significantly higher than Scotland’s in *Space and Shape* and five in *Quantity*).

No Local Education Authority (LEA) in England experienced a decline in performance between 1997 and 2005. The proportion of pupils in England achieving five GCSEs at grades A* to C rose from 45% to 59%³². In the stricter measure which includes good grades in Maths and English, performance has also been improving, to the extent that in 2005 **English pupils caught up with their Scots equivalents**, who have shown little progress as discussed above:

Overtaken?

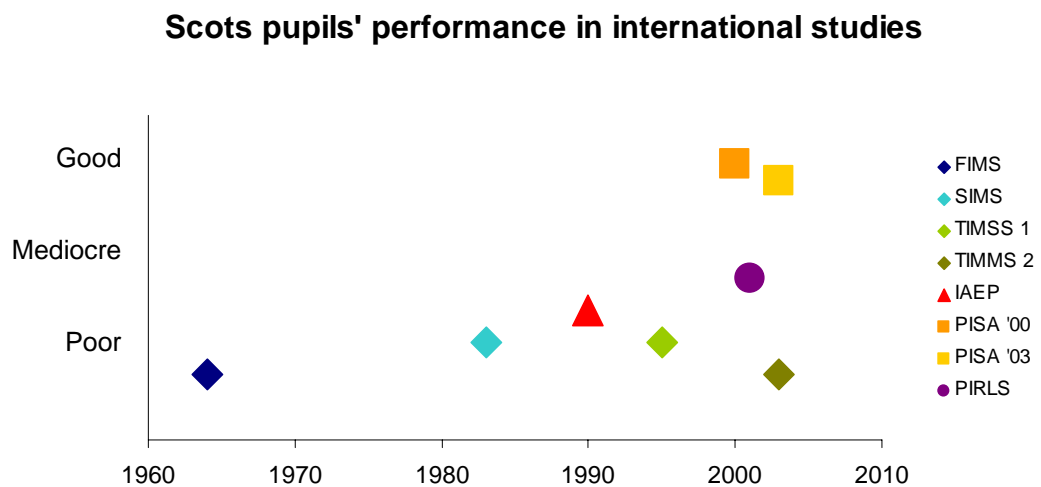


Source: Scot. Exec. Education Dept. & Department for Education and Skills

Commentary on international comparisons

Plotting a graph of Scots students' performance in international studies would reveal a very mixed performance against other OECD countries that participated:

A mixed bag



Source: Illustrative from performance against OECD countries in quoted studies

³² Department for Education and Skills web site (www.dfes.gov.uk).

However it would be unwise to read too much into this for a number of reasons:

1. None of the organisations conducting the studies used directly comparable methods or even samples. Even within studies over time, differences mean that trends must be treated with considerable caution.
2. Samples in individual countries are small, and vary from country to country. This, combined with the studies' infrequency, makes them statistically unreliable. The exception to this is of course actual exam results, which are comparable with England, if inexactly.
3. As with domestic studies, these do not reflect on the performance of current government, but rather on the policies of several years previously.

In addition to these general problems, academics have noted a number of points about the PISA studies which makes interpretation difficult³³.

- The PISA survey is designed to measure the attributes of children of a certain age rather than the performance of schools.
- It includes pupils from private schools. In many countries the distinction between private and state schools is much less stark than here – many schools in continental Europe are independent, but funded by the state. Presumably the inclusion of private schools, which perform better than state schools in Scotland on most measures, improves Scotland's PISA performance³⁴.
- By contrast, in Scotland pupils from special schools were *not* included, unlike in other countries such as Germany. **On a like for like basis our results would appear much poorer.**
- The survey measures pupils' 'life skills', not the performance of schools in teaching a curriculum. Many cultural influences

³³ For more reading and commentary on PISA and other international studies, see for example, *Schooling Resources, Educational Institutions & Student Performance*, Ludger Woessmann, Kiel Institute, *What Accounts for International Differences in Student Performance?* Woessmann & Fuchs, CESifo, *Understanding PISA*, Stephen Downes, www.downes.ca *World's Apart? A Review of International Surveys of Educational Achievement involving England*, Reynolds & Farrell, OFSTED 1996, *Cautions on the OECD's Recent Educational Survey (PISA)*, SJ Prais, Oxford Review of Education.

³⁴ As well as those of England, Australia, Canada and other countries with significant numbers of 'private' schools.

from outwith school affect the results (it is particularly noticeable that English speaking countries tend to do well).

- Being age-based, the survey suits those education systems (such as Scotland's) where pupils of a certain age are by and large in the same grade.

This is not to say that PISA is worthless. Subject to the caveats stated above to do with sampling, methodology and timing, it is encouraging for Scottish *children*, and gives some interesting insights into the causes of different levels of performance.

However, it is not a measure of Scottish state school performance, and it is rather misleading for the Scottish Executive to claim credit for its results³⁵, particularly since performance in the PISA study and others has not improved over time, despite the big spending increases in preceding years (in contrast to what appears to be happening in England).

There is one further component of the equation missing - the relative cost of education. If pupils in country *a* are slightly outperforming pupils in country *b*, but at the same time it is costing ten times more to educate pupils in country *a*, then it does not automatically mean that country *a* has a more effective or efficient education system than country *b*.

As we have seen, there has been a dramatic increase in spending on schools in Scotland over the last eight years. As a result, **spending per head is at least 10% above the OECD average**³⁶.

Conclusion - urgent need to do much better

The world has changed considerably since Scotland's comprehensive education system was first introduced, with some of the most fundamental changes occurring during the last two decades. In his recent Treasury report³⁷, Lord Leitch commented on some of the challenges which lie ahead:

“In the 21st Century, our natural resource is our people – and their potential is both untapped and vast. Skills will unlock that potential. The prize for our country will be enormous – higher productivity, the creation of wealth and social justice.

³⁵ As well as inappropriate. The Executive is surely supposed to be apolitical, and to base its case on one survey seems almost propagandistic.

³⁶ An estimate. According to the OECD (*Education at a Glance 2006*), spending per pupil at primary and secondary level relative to GDP per capita in the UK was about average in 2003. At the same time spending on education and training was more than 11% higher in Scotland than the UK as a whole (*Government Expenditure and Revenue Scotland*, Scottish Executive).

³⁷ *Prosperity for all in the Global Economy: World Class Skills*, see www.hm-treasury.gov.uk/leitch.

The alternative? Without increased skills, we would condemn ourselves to a lingering decline in competitiveness, diminishing economic growth and a bleaker future for all. The case for action is compelling and urgent.”

Leitch went on to recommend radical change across the skills spectrum and suggested that for the UK to become a world leader in skills by 2020, a **doubling in attainment** at most levels will be required.

For inspiration the OECD’s Ischinger turns to the example of Korea which illustrates the pace of improvement that is possible. Only two generations ago Korea had the same standard of living of Afghanistan today and it was one of the worst performers in education among OECD countries. However, today Korea can compare itself with the best performing countries in the world.

The questions we must therefore ask ourselves are:

- How can Scotland repeat the transformation in education which occurred in Korea?
- How can Scotland double the proportion of children gaining five good grades at S4 including Maths and English?
- Can this be achieved if education in Scotland remains in its existing structure?

Recommendations

The majority of domestic and international evidence indicates - at best - that **Scottish schools have plenty of scope for improvement** - improvement that has not yet begun under the devolved settlement.

Despite their encouraging statistics, relying on the small sample used in the PISA studies alone is liable to lead to **misplaced complacency** on the behalf of policy makers in Scotland.

Instead, they should focus on exam results, which give a much more comprehensive picture. **The number of children getting five good grades at S4, including Maths and English, should now become the official benchmark** by which the state school system should be measured.

With this in mind, the Executive needs to move quickly out of its comfort zone and do the following:

- Set out a detailed, long-term plan of how it intends to double attainment. This should include how long the process will take, how much will it cost and how it will be funded. If politicians intend to maintain their control over education then the people who pay for education deserve some detailed commitments on how matters are going to improve.
- Measure progress systematically. HMIe is currently established to provide an ‘independent, rigorous evaluation of the Scottish education system’. As part of this the Executive should ask HMIe to produce an annual survey of attitudes among the key players in education: parents, teachers and employers. The survey should cover their key demands, concerns, attitudes towards choice of school and curriculum, discipline, homework, school hours, length of holidays, school governance, and the role of government.

In the meantime, the rest of us must operate in an absence of definitive information about the quality of schools, but in the sure knowledge that complacency is misplaced and improvement must be sought in many areas. How to go about reform is the next question for the Policy Institute to address.

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Appendix – exam results by local authority 1996/7 – 2004/5

Per cent of all S4 pupils who achieved five or more good grades, including Maths and English (S-grades 1-3, Int2 A-C, Int1 A only)

Education authority	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Aberdeen City	43	43	44	45	45	45	46	45	44
Aberdeenshire	57	56	57	60	60	58	55	55	55
Angus	48	47	44	51	47	48	47	51	49
Argyll & Bute	49	51	51	54	52	56	51	49	54
Clackmannanshire	38	40	39	39	35	32	37	36	40
Dumfries & Galloway	49	47	50	54	52	49	49	46	46
Dundee City	32	33	32	35	33	34	31	32	34
East Ayrshire	45	46	47	47	42	50	47	46	45
East Dunbartonshire	57	55	59	62	63	64	61	58	60
East Lothian	40	38	43	48	41	47	48	48	50
East Renfrewshire	58	62	65	66	64	71	69	62	62
Edinburgh City of	42	42	44	44	44	44	44	44	46
Eilean Siar	53	53	52	54	54	57	54	55	53
Falkirk	46	44	45	44	44	41	43	42	40
Fife	44	44	45	46	45	45	42	42	42
Glasgow City	28	27	30	33	32	30	30	32	30
Highland	51	54	55	57	56	55	53	53	52
Inverclyde	38	39	44	45	40	45	41	47	45
Midlothian	40	40	43	44	40	40	38	37	35
Moray	50	46	47	51	46	51	44	49	46
North Ayrshire	39	39	41	43	41	43	38	39	41
North Lanarkshire	38	40	43	45	39	41	39	41	37
Orkney Islands	57	61	62	66	58	64	57	60	62
Perth & Kinross	50	52	54	55	53	52	52	49	50
Renfrewshire	44	43	48	48	49	49	48	50	49
Scottish Borders	54	53	55	55	57	58	50	49	51
Shetland Islands	56	62	68	70	67	64	65	61	61
South Ayrshire	51	53	51	53	51	50	50	49	49
South Lanarkshire	45	46	48	48	45	45	45	45	45
Stirling	53	53	55	55	52	54	52	55	52
West Dunbartonshire	35	39	37	41	39	40	41	41	38
West Lothian	39	39	41	43	40	40	42	45	43
SCOTLAND	45	45	47	49	47	47	46	46	46

Source: Scottish Executive Education Department