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Partial, Sycophantic, and Superficial:

The OECD Review *Scotland's Curriculum for Excellence, 2021*

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Foreword

The post-war history of Scottish education is punctuated by influential reports that have altered thinking and policy. The 1947 report on secondary education from the Advisory Council on Education in Scotland continues to be a source of inspiration. The Munn and Dunning reports of 1977 still colour the assumptions and practices of Scottish teachers. For approaching twenty years, for better or worse, the 2004 paper, *Curriculum for Excellence*, has motivated a programme of change that has consumed much of the energies of the profession.

Scotland's Curriculum for Excellence: into the future, the recently published report by OECD is unlikely to have as lasting an impact but it seems likely to influence many of the policy decisions made during the term of the current Scottish Parliament. Already the government has announced substantial changes to Education Scotland, the inspectorate and the examinations body, SQA, citing OECD's recommendations in support of its decisions. In accepting in principle all twelve of the report's rather generally-phrased recommendations, the government has signalled an intention of using it to promote further changes.

Opposition parties, by contrast, have scoured the report for criticisms and have found numerous observations on failings in the way *Curriculum for Excellence* has been implemented and on the complacency of the educational leadership class. The report makes clear that a successful implementation programme would have required profound changes, which have not taken place, in the structures and culture of Scottish schooling.

At the same time, the Commission on School Reform has contended that the report provides an opportunity for bringing about substantial beneficial change in the system, arguing that its recommendations have to be interpreted in ways that promote such outcomes.

What nobody has done is examine the quality of the report itself – until now. Professor Paterson's carefully considered and vigorously argued paper examines three essential aspects of the report – the process by which it gathered its evidence, the manner in which that

evidence is presented and its consideration of the place of knowledge in the curriculum, (which he considers the most important educational debate of the moment). He finds the report wanting in all three respects.

There is no doubt that OECD was obliged by the pandemic to work in ways that it would not have chosen. In particular, it was unable to carry out fieldwork or meet with as many people as it might have wished. None of this justifies its refusal to accept unsolicited written submissions, such as that from the Commission. A suspicion remains that the pandemic was used by the Scottish Government to restrict the OECD team's access to dissenting opinion – but of course the team had to acquiesce in this process.

Paterson has written an important and, in many ways, disquieting paper. The report will certainly have an influence on what happens over the next few years but it does not stand comparison with the others mentioned at the start of this foreword.

Keir Bloomer,
Chair
Commission on School Reform

Introduction

The review of Scottish education by the Organisation for Economic Cooperation and Development (OECD) was commissioned by the Scottish government in the autumn of 2019 as a response to a decline in the pass rates in school examinations (Scottish Government, 2020a). The specific focus was on how these assessments related to Scotland's 'Curriculum for Excellence'. In early 2020, opposition political parties in the Scottish parliament forced the review's remit to be extended to cover the whole scope of the curriculum. The restrictions associated with Covid-19 caused a delay, and the postponing of the report's publication until after the May 2021 elections to the Scottish parliament.

Upon publication in June 2021, the report was widely accepted as a guide to how Scottish education should proceed (e.g. *Financial Times*, 2021; *Scotsman*, 2021; *Times*, 2021). The Scottish government welcomed the OECD's praise for the curriculum. All the opposition parties and most of the news media pointed to the critique of how the curriculum had been implemented. All sides agreed with the review's conclusion that the governing networks of Scottish education are introverted and complacent. This reception ensures that the report will be the main influence on Scottish curriculum policy for the foreseeable future.

Yet the truth is that the review is not definitive, quite the opposite. It is philosophically shallow. It is badly written. It is not based on any kind of systematic statistical evidence. In the absence of that, it has committed the cardinal error of non-statistical research: it did not deliberately seek out evidence that would contradict the views that were being put to the authors by the mainly establishment organisations which they consulted. It blandly asserts such sycophantic platitudes as that 'education is a source of pride in Scotland' without citing a single source on the controversies that are generated by such a dubious claim. Along with Curriculum for Excellence and Scotland's dysfunctional system of qualifications, the review is now part of the problem.

This analysis of the OECD report concentrates on three aspects of it: the unconvincing process by which the review reached its conclusions, its misleading presentation of the limited evidence that it collected, and, above all, its no more than rhetorical treatment of the importance of knowledge in any curriculum worthy of the name.

The OECD's process of gathering evidence

The OECD drew on three kinds of evidence. One was interviews with what they call 'representatives of over 40 organisations, education researchers and stakeholder committees' (OECD, 2021, p.17). The second was statistics collated by the Scottish government. The third was statistics compiled by the OECD itself, in the form of data from the triennial Programme for International Student

Achievement (PISA). None of these aspects of the OECD's evidence was satisfactory as to validity or presentation.

Interviews

The interviews took place mainly in the autumn of 2020, and were carried out online. There was also a 'stakeholder consultation event to discuss OECD preliminary findings' in March 2021 (OECD, 2021, p.18). None of these events was public. Participation was at the invitation of the OECD, but it worked through the Scottish government's coordinator of the process. Thus, in effect, all the gathering of evidence was managed by the government. Attempts to submit evidence without being asked were rejected. For example, the reply received from the government by the independent Commission on School Reform[*] when it tried to submit a paper was: 'the OECD are not taking written submissions as part of the Independent Review of CfE. This work has been taken forward through on-line discussions with key education bodies, schools, practitioners, parents and learners'.

The OECD's list of the people and organisations that it consulted is reproduced in Table 1 (at the end this paper). The list consists almost entirely of organisations which develop, manage and advise on Scottish education policy. The ostensibly 'over 40' distinct people or groups had a great deal of overlap. For example, Education Scotland appeared at several events, because it manages the curriculum nationally, is responsible for school inspection, and coordinates the 'regional improvement collaboratives' through which local authorities – the managers of all publicly funded schools – work together. Multiple appearances were also made by the Scottish Qualifications Authority (which runs the assessment of pupils in the senior years of secondary school) and the Association of Directors of Education in Scotland (the professional organisation of educational officials in the local authorities). The trades unions representing teachers and headteachers also appeared at several meetings.

It is then not surprising to find that most of the people and organisations that were consulted by the OECD have sat on Scottish government committees which have developed and managed Curriculum for Excellence: these are the Curriculum and Assessment Board (since 2017), or its predecessor, the Curriculum for Excellence Management Board (2007-17). This and other relevant information is summarised in the third column of Table 1. These boards are the epitome of corporatist management, enabling the government to recruit into responsibility for the curriculum almost all sources of potential criticism – not only its own agencies, and the nominally independent schools' inspectorate (part of Education Scotland), but also representatives of the independently elected local authorities, of head teachers, of teachers, of parents, and of universities. The post-2017 board also includes two of the academics who were consulted by the OECD.

[*] The present author is a member of the Commission on School Reform.

Most of the few exceptions to this membership of official curriculum committees are beholden to the Scottish government in other ways, as also noted in the table. Representatives of employers, in their capacity as recruiters of young workers, sit on a committee that oversees a government programme called 'Developing the Young Workforce'. Youthlink Scotland is 'the national agency for youth work' which cooperates closely with the Scottish government, and administers Scottish government grants. YoungScot administers various services for young people on behalf of the Scottish government. The Admissions Policy Group of Universities Scotland is in principle independent of government, but government policy on widening access, implemented through the Scottish Funding Council, is a strong constraint on universities' policies on admissions.

The OECD was, of course, right to consult with all these insider bodies. No modern education system can dispense with the expertise and experience in the kinds of organisations that manage Curriculum for Excellence. The problem is not their inclusion, but the only partial inclusion of other points of view. The only exceptions that did not have to share a session with the management agencies of these various kinds were individual schools, and the cross-party committee of the Scottish parliament (given only an hour and a quarter). A few other consultees have no direct responsibility for any aspect of the curriculum: Connect (an independent parents' organisation), the Youth Parliament, the Children's Parliament, and the campaigning organisation Children in Scotland. But all of these shared a consultation session with organisations that do have some managerial responsibilities for Scottish government policies or funds.

Schools

So the capacity of the OECD review to see Scottish education from points of view that were independent of the government and its agencies was almost entirely restricted to its consultation with schools (all remotely). These are listed in Table 2. There was contact with people or groups in 20 named schools: 14 secondary schools, five primary schools, and one special school. Included here are schools (KEAR campus special school, and Harrysmuir primary) that did appear in connection with agencies which manage the curriculum, because they were named in the OECD's consultation list as schools, not as representatives of some other group. (This is in contrast to, for example, headteachers who appeared unnamed in the consultation list as representatives of various professional associations that were themselves involved in managing policy on the curriculum.) Even that exaggerates the extent of the access to schools, because there were virtual visits to only six schools: five secondaries (with two in one session) and one primary. Seven other schools were involved in consultation with groups of teachers, four in groups of headteachers, and three in groups of pupils. (Some schools appeared in more than one of these groups.) So school visits were limited, but if we take the generous view that the OECD will have gained from these contacts some insight into the experience of all 20 schools, then the relevant characteristics are as summarised in Table 2. Some key points from that table are:

- Denomination: All were non-denominational, thus missing, in the publicly funded sector, the 305 primaries and 53 secondaries that are Catholic, and also the three Episcopalian primaries and one Jewish primary. At both primary and secondary level, that is omitting 15% of schools and 18% of pupils (Scottish Government, 2019a, Tables 2.2 and 3.2). In a study of the curriculum, not paying attention to the potentially distinctive experience of denominational schools is a mistake.

- Source of funding: All the schools are publicly funded, thus missing the 80 independent schools that cover the primary years, and the 77 that cover those secondary years which lead to external assessment (Scottish Government, 2019b). The independent schools educate 4.2% of all pupils in Scotland (OECD, 2021, p.20). This omission is a particularly serious loss when considering the implications of external assessment, and also when understanding educational inequality. In the absence of good-quality surveys of school leavers in Scotland (for which, see below), there is no completely reliable source that would show the numerical importance of the independent schools at the senior-school stage, but one indicator is the proportion of entrants from Scotland to university who came from independent schools: in 2018-19, it was 9% (HESA, 2021), more than twice the proportion of pupils overall who attend independent schools.

- Characteristics and attainment of pupils: We can use the Scottish schools' information dashboard to assess whether the schools that were involved in the OECD review are representative of all publicly funded schools in other respects than denomination. Table 2 records several relevant characteristics (with the sources of each):
    - the percentage of pupils who were registered for free school meals, which is an indicator of poverty (and is better than any of the other such indicators that are available from administrative sources (Jerrim, 2021a));
    - the percentage of pupils whose ethnic group was classified as 'white, UK';
    - in secondary schools, the percentage of pupils who attained five or more awards at level 5 of the Scottish Credit and Qualifications Framework (over 90% of which are a National 5 award at grades A-D);
    - in secondary schools, the percentage of pupils who attained five or more awards at level 6 of the Scottish Credit and Qualifications Framework (over 90% of which are a Higher award at grades A-D).

  These measures are not wholly satisfactory: for example, it would have been preferable to have had records of passes (grades A-C), and recorded separately for the named certificates National 5 and Higher rather than only for all awards at these levels. But this is the only information that is available on individual schools, and all the measures have the advantage of being objectively measured or, in the case of ethnicity, being a

subjective measure that is defined in ways that are consistent with other sources (such as the population census).

In some important respects, the OECD schools were representative of publicly funded schools. At secondary level, the proportion in the 'white UK' ethnic group was 85%, close to the 86% nationally. There was similar representativeness of ethnic group in the primary schools (84% against 83% nationally). The attainment levels of the secondary pupils were also representative: 68% against 64% at level 5, and 39% against 36% at level 6.

Nevertheless, there are other ways in which the schools were not representative, especially of large swathes of poverty outside the cities. This is already evident in Table 2 for both secondary and primary schools, where the OECD sample had respectively 14% and 18% registered for free school meals, less than the national proportions (17% and 21%). Only three of the OECD secondaries had a percentage registered for free school meals that was clearly above the national average. Two were in Glasgow, and one was in West Lothian. Only one primary had an above-average percentage, in West Lothian. So the poverty of the west-central region outside Glasgow was under-represented, as was the poverty of Fife, central Scotland and Dundee – the heart of post-industrial social problems. Poverty in Aberdeen was also under-represented. Rural poverty barely figured at all.

Of course, the schools which were represented in the OECD sample will have provided valuable insights into the kinds of educational experiences that they represent. In particular, not to have included Glasgow would have been to have excluded both acute poverty and also some strong progress in attainment in recent years in overcoming its effects (Accounts Commission, 2021). The point is that, in a fairly small sample of 20 schools (only six of which were studied in depth), other important experience was missed too. For example, the omission of any school in Renfrewshire left no scope for investigating that local authority's recent innovative and successful programme of developing literacy among young children in primary school (Ellis et al., 2018). The complete omission of Edinburgh left no capacity to assess the impact of the large sector of independent schools in the city on the publicly funded sector there. That impact could be negative, such as in the removal from the publicly funded schools of a large minority of affluent pupils who have strong educational support at home, but it also could have a positive effect on the curriculum, such as in the various schemes in the city for the teaching of minority subjects in collaboration between publicly funded and independent schools.

These are all omissions in the design of the OECD's empirical investigation. Even more glaring is the absence from the report of any information about what was said at the various meetings, and then what the researchers did with the evidence that they collected there. There is no record of the questions which the researchers put to the interviewees, or the ways in which the answers were recorded, collated, and summarised. Nowhere does the report explain how it analysed the interviews. The reader has no way of knowing whether the

comments on the curriculum that are quoted in the report are representative even of the evidence that was gathered. Nothing is said about how the draft report was discussed at the 'stakeholder consultation event' in March 2021, nor whether, or how, the Scottish government was able to modify the report's draft analysis and conclusions.

In short, the OECD's mode of gathering and collating evidence denied it access to a range of diverse views, and excluded from its attention many types of local educational experience without which it is not possible to construct a nationally representative account. Even for the evidence that it did collect, the report is wholly inadequate as a record of evidence-gathering and analysis.

Misleading presentation of evidence

In one sense, the absence of objectively verifiable data was not the OECD's fault. It was forced into using mainly interviews and school visits because of the absence of any good-quality series of surveys of Scottish education, and by the very limited nature of the administrative data that are available. This absence has been analysed elsewhere (Paterson, 2018). In brief: the present Scottish government withdrew Scotland from the periodic international surveys of mathematics and science, and of literacy (TIMSS and PIRLS International Study Center, 2021), and brought to an end the long-running surveys of teaching, learning and attainment in primary and early secondary (the Scottish Survey of Literacy and Numeracy, 2011-16, the Scottish Survey of Achievement, 2005-9, and predecessor surveys of these stages of schooling stretching back to the 1980s and, more sporadically, the 1960s, 1950s, 1940s and 1930s). A previous Scottish government ended the series of surveys of school leavers that started in the early 1950s and lasted for half a century. The OECD passes over the ending of this internationally distinguished record without any comment at all, despite recommending the collection of better data. The failure of the OECD to expose itself to a truly diverse range of views during this investigation is starkly exposed in this apparent ignorance of what has been lost.

Beyond its own interviews, the report then resorts to citing spurious evidence and to presenting what could be valid evidence in misleading ways. The spurious evidence arises because the report has taken on trust various official publications from the Scottish government (some details of which were included in the extensive document which the Scottish government gave itself permission to submit to the OECD (Scottish Government, 2021).) For example, the report comments on inequality of attainment, and on whether it has been falling, by citing statistics in relation to the Scottish Index of Multiple Deprivation. This is a measure of the social characteristics of neighbourhoods; as such, it is of very high quality. But it is not a reliable measure of the characteristics of individuals or of families (Paterson et al., 2019), mainly because about two thirds of actually deprived families live in neighbourhoods which the index classifies as not being deprived, and because about a quarter of families in the deprived areas are not themselves deprived. Thus, for example, an increase in higher-education

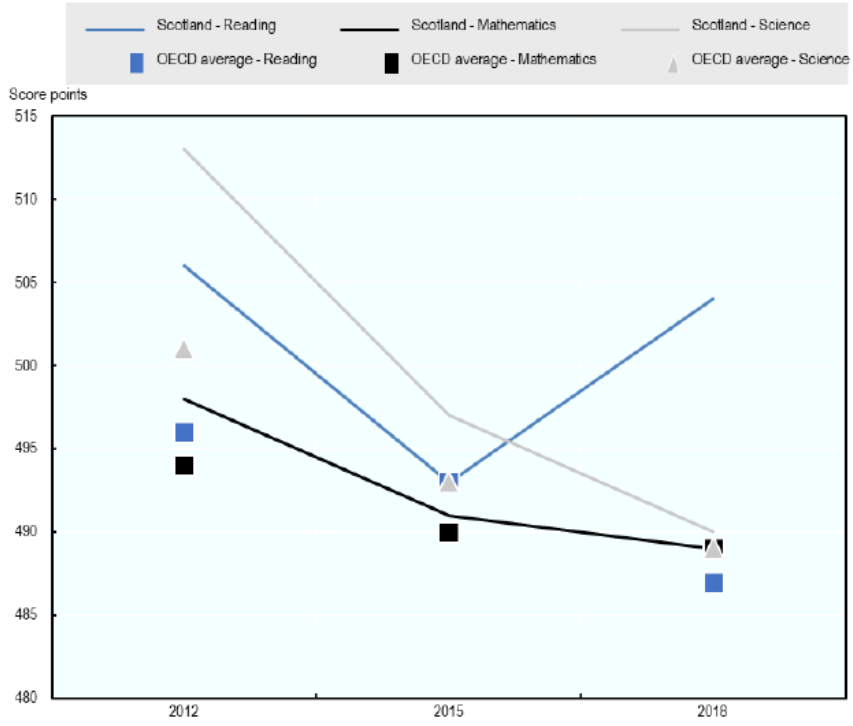
participation from deprived neighbourhoods could well be due mainly to people who are not themselves deprived; there is some evidence suggesting that this is indeed what has been happening under the heading of widening access (Paterson et al., 2019).

The OECD also cites Scottish government reports which present opinions as if they were facts about the educational reality to which the opinions relate. An example is on whether the Scottish Attainment Challenge is succeeding in reducing inequality of attainment. A government survey in 2019 (Scottish Government, 2020b) found that (in the OECD report's words) '88% of headteachers reported improvements in closing the poverty-related attainment gap' (OECD, 2021, p.32). Yet this survey did not ask the headteachers to provide any objectively verifiable evidence to support their views, nor even to say how they had reached these conclusions. Even the annual government reports of the proportion of pupils who are judged to have reached successive levels of the Curriculum for Excellence are based on 'teacher judgements', rather than on neutral evidence. The OECD can say only that these judgements are 'informed by a range of evidence' (OECD, 2021, p.25). It is known from previous research in Scotland (Munro and Johnson, 2008) and elsewhere (Campbell, 2015; Malouff and Thorsteinsson, 2016) that teacher judgements are not as reliable in assessing a pupil's attainment or progress as objective assessment. This is true at all levels of education, from primary to university (Richardson, 2015), which is one major reason why education systems rely on standardised assessment that is conducted independently of the teachers (Kellaghan and Greaney, 2019)

There is one source of good-quality data which the OECD does use: the PISA studies, conducted every three years since 2000. These are comprehensive surveys of students aged about 15. Since 2006 they have fully covered attainment in three domains of study – mathematics, science and reading. They have also collected detailed evidence on the social characteristics of students, on support from their parents, on educational resources which parents can afford in their homes, and on the pedagogical practices of their teachers. The PISA survey is run by the OECD itself, under contract to national governments but in most respects independently of them.

The OECD report uses the PISA evidence, but presents it in a misleading way that is too generous to Scotland. Consider, for example, the graph labelled Figure 1.2 in the report, which is reproduced here:

Figure 1.2. Average performance in reading, mathematics and science in Scotland (United Kingdom) and the OECD average, PISA 2012-18

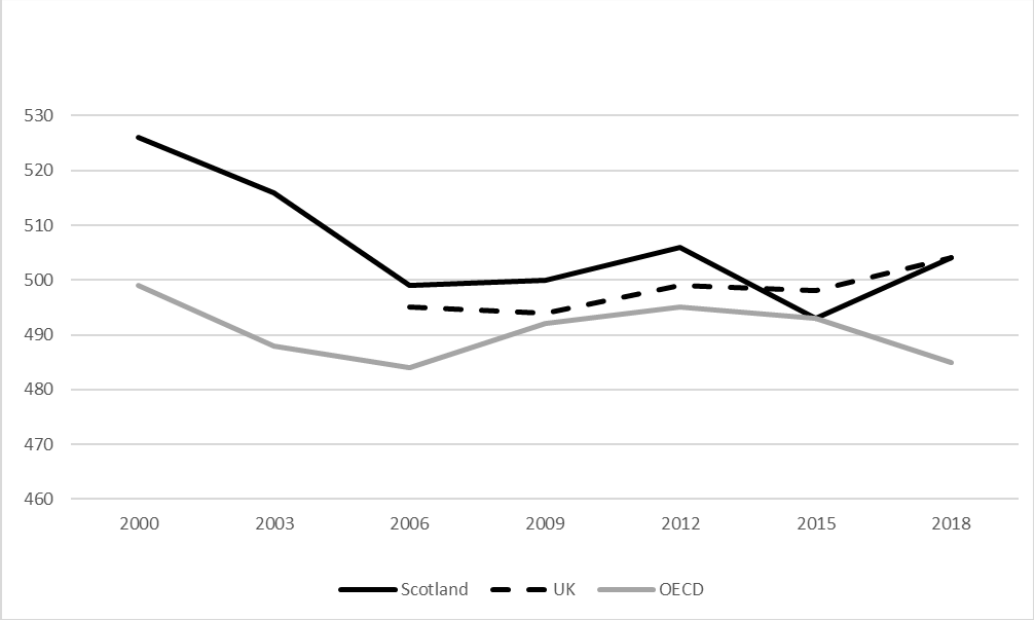


Note: The data for this figure was collected before Costa Rica became an OECD member. In 2015 changes were made to the test design, administration, and scaling of PISA. These changes add statistical uncertainty to trend comparisons that should be taken into account when comparing 2015 results to those from prior years. Please see the Reader's Guide and Annex A5 of PISA 2015 Results (Volume I): Excellence and Equity in Education (OECD, 2016) for a detailed discussion of these changes.
Sources: OECD (2019[16]), *PISA 2018 Results (Volume I): What Students Know and Can Do*, https://dx.doi.org/10.1787/5f07c754-en; OECD (2019[17]), "Results for regions within countries", https://dx.doi.org/10.1787/bad603f0-en.

StatLink https://doi.org/10.1787/888934240807

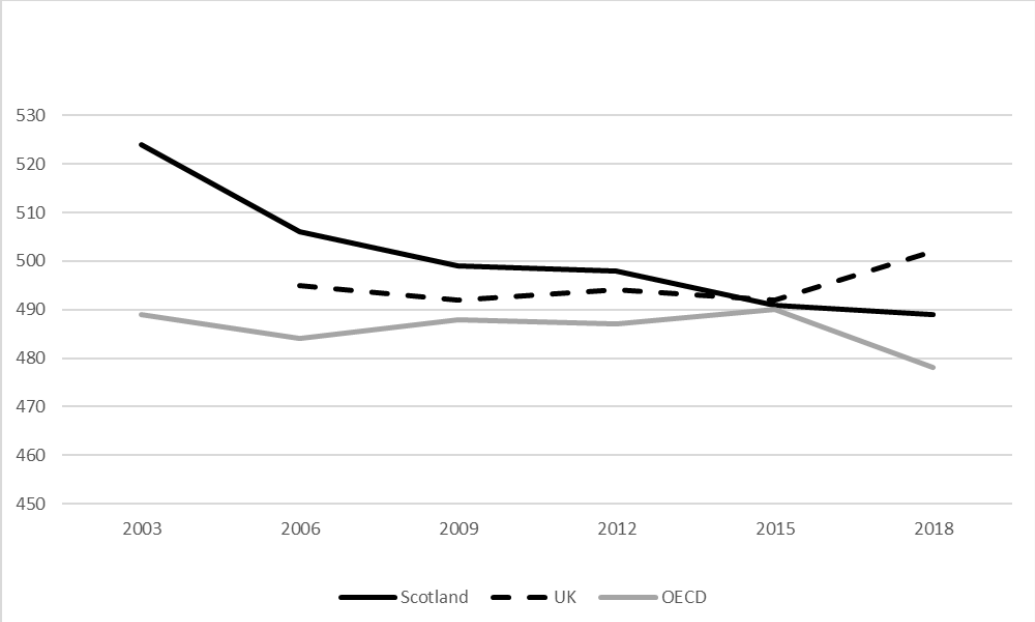
The report comments thus: 'Scotland's average scores declined between 2009 and 2018, similarly to average OECD performance, and improved in reading and remained stable in mathematics and science between 2015 and 2018' (OECD, 2021, p.24). This in effect ignores the period before 2012, because of the artificial truncation of the graph at its left-hand end. The three graphs below show the story in the PISA series back as far as it possible to go and still have comparability of methods, which is to 2000 for reading, 2003 for mathematics, and 2006 for science (but in the rest of the UK only from 2006 for all three domains. Thus the segments of these graphs from 2012 onwards are the same as in the above graph. What is then clear is that the decline in reading and in mathematics started well before 2012, and that the partial recovery in reading in 2018 took the level back only to where it had been in 2012, which was below achievement in earlier years.

Figure 1
Reading attainment in PISA data, Scotland, UK and OECD, 2000-18



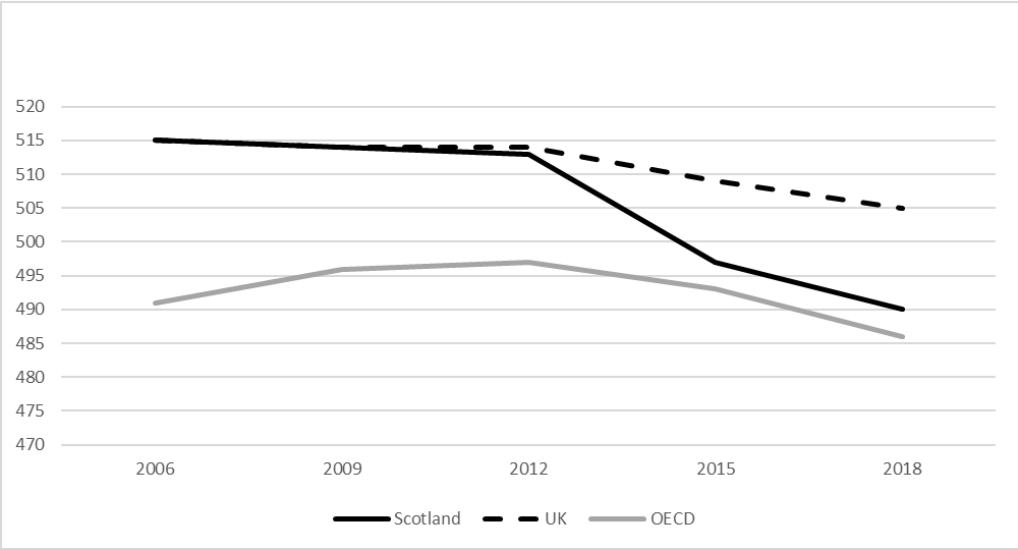
Source: successive PISA reports, available at https://www.oecd.org/pisa/. See also report on the Scottish results, Scottish Government (2019).

Figure 2
Mathematics attainment in PISA data, Scotland, UK and OECD, 2003-18



Source: successive PISA reports, available at https://www.oecd.org/pisa/. See also report on the Scottish results, Scottish Government (2019).

Figure 3
Science attainment in PISA data, Scotland, UK and OECD, 2006-18



Source: successive PISA reports, available at https://www.oecd.org/pisa/. See also report on the Scottish results, Scottish Government (2019).

What to make of these fuller graphs is of course not clear. Because Curriculum for Excellence was extended to all primary schools only in 2010, and would thus have had an effect on people aged 15 (three years after leaving primary school) only in the last two PISA surveys, it could be inferred that the curriculum cannot be the only explanation of the decline. On the other hand, the curriculum itself was described as building on existing practice: for example, one of the early policy documents in the development of Curriculum for Excellence proclaimed that 'we already have a great deal of excellent practice in Scotland. We need to build upon this …' (Scottish Government, 2008, p.4). The new curriculum was consistent with the increasingly child-centred character of Scottish schools, a tendency that had persisted even during the long period when the UK Conservative government had been quite hostile to these ideas in the 1980s and 1990s (Paterson, 2003, chapter 7; 2020). The unifying philosophy is a version of curricular constructivism, defining the curriculum as something to be explored by the pupil and teacher (Priestley and Sinnema, 2014), rather than as a body of knowledge and skills into which the pupil is inducted by the teacher as an expert authority. If Curriculum for Excellence is an intensification of changes that had been happening gradually for several decades, then its effects would not be likely to happen suddenly after the moment of official inauguration in 2010. So the changes which these graphs show from before 2012 may still be a consequence of curricular policy, but of a more diffuse kind than simply the result of a new policy label.

That inference might be especially cogent in the light of the comparison in these graphs with the UK as a whole (trends that are driven mainly by the data from England, because of its size). This comparison leads to the conclusion that, while attainment in Scotland has been falling, in England it has either been rising (reading and mathematics), or not falling so fast (science). The UK context is

almost entirely absent from the whole OECD report, a missed opportunity for drawing inferences about policy because comparison of neighbouring similar countries (such as Scotland and England) has long been recognised as being generally much more valid than comparisons of places further afield (Raffe et al., 1999).

The OECD could have drawn on its own large resources of statistical expertise to analyse the Scottish data afresh, for example by considering aspects of PISA's attainment tests that might be expected to have been most influenced by the attention which Curriculum for Excellence gives to applied skills. Instead, the OECD chose simply to reproduce, in truncated form, data that have already been put in the public domain. That was rather lazy.

The OECD also missed an important caveat that might lead us to believe that the 2018 Scottish PISA results were too optimistic. Professor John Jerrim of University College London has discovered (by Freedom of Information requests) that the date for the PISA 2018 Scottish tests was shifted to the autumn, whereas in all previous PISA rounds (and in most other countries) it was in the spring. Jerrim (2021b) explains that this move probably led to an upward bias in the Scottish attainment levels when compared to earlier years, essentially because most of the sample was a few months older and also had experience of sitting national examinations in the late spring. He estimates that the effect of this bias could entirely explain the apparent increase in reading attainment in 2018, and also that, if the bias is removed, the downward trajectory in mathematics and in science would have continued the trend from 2012 to 2016, rather than levelling off as the graphs above seem to suggest.

The OECD report's analysis of PISA neglects a further aspect of the data, related to social inequality of attainment. It accurately points out that 'students' socio-economic status has a relatively small impact on their performance in Scotland, compared to other OECD countries and economies' (OECD, 2021, p.26). But that ignores the reason why the Scottish gap is relatively low: it is not that socially disadvantaged students in Scotland were doing particularly well, but that the advantaged were doing relatively badly compared to similar countries. Consider the comparison with England (OECD, 2019, p.338). Disadvantaged students in PISA are defined to be people in the lower quarter of a scale of 'economic, social and cultural status', and the advantaged are those in the top quarter. The attainment in reading of the disadvantaged quarter was 472 in Scotland, very similar to the 471 of the disadvantaged quarter in England. The attainment of the advantaged quarter was 544 in Scotland and 553 in England. The standard errors of the latter two numbers are 5.3 and 4.6, and so the difference may have occurred by the chance vagaries of sampling. But what certainly cannot be inferred is that Scottish schools are particularly beneficent places for people of low socio-economic status, contrary to the implications of the OECD report's claim about social inequality.

That is not the end of the selective quoting of PISA results in the OECD report. In the 2018 survey, there was an unprecedented module of questions relating to

'global competency' (OECD, 2020). In many respects, Scottish students performed better here than in the core tests in that year, and the report points this out. For example, the percentage respecting other people as equal was high compared to the OECD average (87% compared to 83%). The same was true of treating people with respect (86%/81%), giving people space to express themselves (85%/78%), respecting the values of other cultures (85%/79%), and valuing the opinions of people from different cultures (85%/78%). (These figures come from the original report of this aspect of the 2018 survey: OECD (2020, pp.292 and 294).) Scotland also had above-average proportions with positive attitudes to immigrants (p.304), on all aspects of the question (opportunities for immigrant children, right to vote, right to a distinctive lifestyle, general rights).

But that high Scottish performance on respect and on attitude to immigrants was not typical of the dimensions which PISA assessed. Take, for example, awareness of global issues (pp.268-73). Scotland had a slightly above-average value of a summary index of this, but Scotland's relative position varied across different dimensions of awareness. Scotland had an above-average proportion who were aware of the causes of global poverty (87% compared to 78%), was average on most aspects of awareness, and had a below-average proportion who were aware of global health (59% compared to OECD 65%).

Similar variation was found in relation to the capacity to do things politically (so-called self-efficacy), on taking other people's perspective, and on learning about other cultures. Indeed, more generally, where Scotland clearly does not do well is on what is learnt in school about these matters. On cognitive performance Scotland is well above average (p.318, and p.84). In that respect, there is a clear contrast to the results on reading, mathematics and science which are summarised above. But the picture is not so good on the role which schools might have played in this (pp.320-5). For example, the proportions who report learning in school about specific topics were (p.320):

- interconnectedness of countries' economies: Scotland 40%, OECD average 55%.
- solving conflicts: Scotland 52%, OECD average 64%.
- different cultures: Scotland 70%, OECD average 76%.

Moreover, the proportion who reported that their teachers asked them for their own opinion about international news – a key pedagogical principle of Curriculum for Excellence – was 41% in Scotland, against an OECD average of 46% (p.322).

The contrast between students' ethical commitment and the gaps in their knowledge that might be relevant to such views does not reflect well on the school curriculum. It implies that Scottish schools are less important as sources for pupils' knowledge and understanding of global issues than are schools in other countries. Yet the OECD report on Curriculum for Excellence acknowledges none of this, even implying that students' ethical commitment might be attributable to the curriculum (OECD, 2021, p.117) without showing

any specific evidence to believe that the opinions followed from anything which the schools were doing.

Selective use of time series, selective quoting of survey results, and tendentious reporting of measures of inequality all constitute bad statistical practice. If this OECD report had been a report of UK Official Statistics, it would have fallen foul of the code of practice of the UK Statistics Authority, the regulator that is responsible for the quality of official statistics (UK Statistics Authority, 2018). In that sense, the OECD report is irresponsible.

Knowledge

The OECD report does not acknowledge any of the deepest controversy which Curriculum for Excellence has provoked. It does note the controversies about implementation – the vast amount of guidance issued to teachers, most of it regarded by teachers as useless; the failure to find a way of assessing students in a way that would be consistent with the principles of the curriculum; and the resulting disjunction between the phase of 'broad general education', up to the third year of secondary school, and the subject-specific study that follows as students prepare for national assessments. The recommendations of the report mostly relate to these kinds of controversy.

On the most fundamental criticism, which is that the curriculum does not pay enough attention to knowledge, the report provides some largely tokenistic comments, but fails to define clearly what it means by knowledge, and completely ignores relevant recent research in cognitive science and neuro-science on the importance of knowledge in how people learn. This kind of criticism – relating to knowledge – has been aired from the earliest years of the planning of the new curriculum, and has never been adequately addressed by the policy makers (Paterson, 2007, 2009). Despite its repeated rhetorical obeisance to 'knowledge and skills', the OECD report does not discuss this core problem.

Rhetoric aside, the report seems to mean two distinct things by knowledge. One is more or less a synonym for what it calls 'subject-specific concepts and detailed content' (OECD, 2021, p.34), in other words the syllabuses for the assessments that are typically taken in the fourth, fifth and sixth years of secondary school. On this meaning, the OECD's recommendation is essentially to adapt these assessments to the cross-disciplinary and applied aims of the curriculum rather than to find ways of accommodating subject specialism in the curriculum.

That recommendation misses the point, which is that, without a foundation in specialist knowledge, neither inter-disciplinarity nor application is likely to be sound. This problem is partially addressed in the other of the two ways in which the report defines knowledge (OECD, 2021, p.47). It mentions four kinds of knowledge: disciplinary, interdisciplinary, epistemic (by which it means 'how expert practitioners of disciplines work and think'), and procedural ('the series of

steps or actions taken to accomplish a goal'). Nevertheless, interesting though this list is, it does not in fact do anything other than re-state the problem. The problem is not only that 'inter-disciplinary' presupposes 'disciplinary'. It is also, in the third meaning, that much of the psychological research on expertise makes clear the importance of its disciplinary foundation (Sweller, 2011). In the procedural meaning, there is an unacknowledged and implausible assumption that goals might be set without reference to a body of disciplinary knowledge.

Cognitive research has reached quite different conclusions. According to this, in order to develop competence in any subject, the student must acquire a deep foundation of factual knowledge, an understanding of facts and ideas in the context of a conceptual framework (which we could call a 'discipline'), and a mental organisation of that knowledge that facilitates retrieval and hence facilitates the application of knowledge (Kirschner et al., 2006; Stockard et al., 2018). In fact, it is often inferred from this that the main purpose of teaching is to inculcate and train these mental organisations, which in the psychological research go under the label of schemata (Eggen and Schellenberg, 2010; Sweller, 2011). A schema is a mental map of an aspect of knowledge, what in a curricular context would be called an area of a discipline. Examples of schemata are:

- gravity;
- multiplication tables;
- photosynthesis;
- plot, narrative and character;
- the process of decolonisation after the Second World War;
- the grammatical structure of most European languages.

Thus a schema can be something we acquire intuitively, perhaps even as a result of evolution, such as a sense of how gravity operates. It can be basic and elemental, such the rules of multiplication, or of spelling in our first language. It can be the founding principles of a whole branch of science, such as how plants grow. It can define a discipline, such as the aesthetic study of novels, plays or films. It can capture an important aspect of our understanding of social development. It can help us to understand the way we understand.

When we have such a schema embedded in long-term memory, learning new information is easier, because we assimilate it to the structure we already have. For example, we learn very early that everything falls when dropped, and so we are beginning from birth to develop a schema for gravity. When we read a new novel, or see a new film, we recognise the conventions of what a novel or a film is only if we have acquired the schemata for these literary forms. When we learn a new European language, we understand the concept of noun, verb and so on, and if we have done that once then we have a schema that helps us to learn a new language of this kind.

Learning in general can be thought of as sending things to long-term memory by means of assimilating new information to schemata that are firmly embedded in the mind. This is where neuro-science comes in – the understanding that the

capacity of human long-term memory is vast, but of our short-term memory is tiny. The skilled teacher has to use the latter to strengthen the former. So you propose a new fact to a class – say the changing pattern of social inequality that is likely to follow the present pandemic. You get that fact into long-term memory by linking it to what you hope is a schema that is already present there, such as a way of thinking about social inequality before the present. As a teacher, the aim is to enable the facts of pandemic-related inequality to be retrieved because they are attached to the students' schema for inequality, rather than as a set of new facts to be learnt by rote.

That's what knowledge is – the content of long-term memory, plus schemata for retrieving it – which is why knowledge is fundamental to effective education. Nothing else matters. The principle is as true of the most elementary stages of education – in primary school or even earlier – as it is of the most advanced. The OECD report's largely uncritical treatment of primary education, as if Curriculum for Excellence had faced no problems there, betrays a failure to understand how important the primary stages are for laying the basis of disciplinary understanding much later. That is, after all, one reason why we call them 'primary'. If we want to add inter-disciplinarity, then what we are doing, in effect, is adding a level of schemata on top of existing schemata, often formed at a young age but also repeatedly re-formed as our learning matures. This is often what happens when significant scientific breakthroughs are achieved. The genetic revolution that has delivered many of the most successful vaccines this year has come about because an old schema – understanding viruses in a biological or epidemiological sense – interacted with the wholly new schema that came from gene sequencing in order to create ways of gene editing that in turn led to the RNA vaccines. This is also in fact an example of the importance of schemata in applying knowledge.

If we then ask what the role of learning facts is, we would have to say that they are pedagogically crucial, but also only a means to the end of assimilating a schema. Facts are crucial because they are the only way to acquire a real understanding of a schema, an intuitive sense rather than a set of abstract principles. Students do not truly understand photosynthesis unless they have observed and analysed how individual plants behave. The study of decolonisation is nothing if it is not animated by the lives of a Gandhi or a Mandela or, indeed, a Churchill or an Attlee. The skilful design of a syllabus then requires the selection of just those examples which will most firmly embed the principles – the schema – in the students' minds.

Once there, though, the facts become somewhat incidental. Few of us will remember the first examples we had of multiplication, or of the idea of a character in a novel. Yet we are able to deploy these concepts – part of the relevant schema – to good effect even in our daily lives, whether or not we are specialists in any relevant domain. This is also why the form that school examinations have now taken is the very opposite of educational – memorising lists of facts, or even rote-learning screeds of text to be regurgitated in the exam hall, and then to be forgotten. The far more effective role for examinations is to

test concepts – the understanding of schemata. The OECD intends to issue a second report on Scottish education in August 2021, addressed solely to the question of assessment. It is to be hoped that this new report is better informed about relevant research on learning and the importance of knowledge than the original one.

Conclusions

That the OECD report is partial may not matter in itself. It would not be the first time that a government had managed to shape an ostensibly independent report to suit its own agenda. The report captured the headlines in its comments on the complacency of the leadership class in Scottish education, a conclusion that was to be expected in the light of the self-referential character of the people and organisations which it consulted. The government then used this comment as a reason to propose to abolish the Scottish Qualifications Authority and to separate the school inspectors from Education Scotland. These may well be good ideas, but nothing which the report actually said could be used to justify them. Thus they are policy moves that, however warranted, do not provide evidence that they are in fact warranted. This is not evidence-based policy.

The problem in Scotland is that there is no source of independent analysis of policy. Because the main survey series have been ended, because almost the entire educational establishment was enlisted into providing evidence that would support the OECD's (and thus the Scottish government's) conclusions, because the opposition political parties fell into the trap of anticipating the independence of the report before it was even issued, the scope for debate after its publication has in fact been even more restricted than it was before. If this is what an independent report says, the argument now goes, then we have no option but to follow its recommendations, even though that leaves the core of the problem untouched.

That core is the absence of attention to knowledge, and the absence even of an understanding of what knowledge is and why it matters in education. This present paper is not the place to rehearse yet again the history since the 1960s of thinking about knowledge in education circles, but the essence of the trajectory is clear, and is manifest in the OECD's thinking in this report and elsewhere (Paterson, 2015). Knowledge came to be seen as the problem because it supposedly destroyed pupils' motivation, and favoured the children of the rich and the well-educated. To that was readily added the further claims that an emphasis on knowledge also favoured men over women, white people over other ethnic groups, and speakers of major languages over those, such as Gaelic, whose culture had been marginalised by that linguistic dominance. When writers such as E.D. Hirsch pointed out that knowledge might in fact be the only way in which powerless social groups might be emancipated, they were excoriated for alleged cultural arrogance.

Yet if there is one important cultural point which recent decades of cognitive science shows – some of which was cited above – it is that an affinity for knowledge is a common human trait. Culturally specific knowledge might indeed be unfairly alienating to social groups which have no affinity with its provenance. But the concept of knowledge itself transcends specific cultures. Indeed, the greatest inter-disciplinarity that might be imagined is the capacity of knowledge to be shared, even between cultures that initially imagine they have nothing in common. That is what the great English liberal, Matthew Arnold, meant when he wrote in 1869 that the purpose of any education worthy of the name is to acquire an understanding of the best that has been thought and said, to which we might add also in whatever culture it is found. An understanding of knowledge in that bold sense is what Scottish education needs. The chances of such an outcome has not been advanced by the OECD's partial, sycophantic, and superficial review.

References

- Accounts Commission (2021), *Improving Outcomes for Young People through School Education*, Edinburgh: Accounts Commission.
    - https://www.audit-scotland.gov.uk/report/improving-outcomes-for-young-people-through-school-education.
- Campbell, T. (2015), 'Stereotyped at seven? Biases in teacher judgement of pupils' ability and attainment', *Journal of Social Policy*, 44(3), 517-47.
- Eggen, P. and Schellenberg, S. (2010), 'Human memory and the new science of learning', in M.S. Khine and I.M. Saleh (eds), *The New Science of Learning*, Springer, New York, 79-107.
- Ellis, S., Anderson, J. and Rowe, A. (2018), *Report on the Renfrewshire Literacy Approach: August 2015–July 2017*, Glasgow: Strathclyde University.
    - https://strathprints.strath.ac.uk/62912/
- *Financial Times* (2021), 'Scotland's school exams body to be scrapped', 21 June.
- Higher Education Statistics Agency (2021), 'Figure 6 - UK domiciled full-time HE undergraduate student enrolments by participation characteristics', Cheltenham: HESA.
    - https://www.hesa.ac.uk/data-and-analysis/sb258/figure-6
- Jerrim, J. (2021a), *Measuring Disadvantage*, London: Sutton Trust.
    - https://www.suttontrust.com/our-research/measuring-disadvantage-higher-education-polar-fsm/
    - Jerrim, J. (2021b), 'PISA 2018 in Scotland: It's all a bit of a mess', https://ffteducationdatalab.org.uk/2021/04/pisa-2018-in-scotland-its-all-a-bit-of-a-mess/
- Kellaghan, T. and Greaney, V. (2019), *Public Examinations Examined*, Washington: World Bank Publications.
- Kirschner, P., Sweller, J. and Clark, R.E. (2006), 'Why unguided learning does not work: an analysis of the failure of discovery learning, problem-based learning, experiential learning and inquiry-based learning', *Educational Psychologist*, 41(2), 75-86.
- Malouff, J.M. and Thorsteinsson, E.B. (2016), 'Bias in grading: A meta-analysis of experimental research findings', *Australian Journal of Education*, 60(3), 245-56.
- Munro, L. and Johnson, S. (2008), 'Exploring the validity of teachers' judgements of pupils' attainments', paper presented at annual conference of International Association for Educational Assessment, Cambridge.
- Organisation for Economic Cooperation and Development (2019), *PISA 2018 Results (Volume II)*, Paris: OECD.
- Organisation for Economic Cooperation and Development (2020), *PISA 2018 Results (Volume VI): Are Students Ready to Thrive in an Interconnected World?*, Paris: OECD.
- Organisation for Economic Cooperation and Development (2021), *Scotland's Curriculum for Excellence*, Paris: OECD.
    - https://www.oecd-ilibrary.org/education/scotland-s-curriculum-for-excellence_bf624417-en
- Paterson, L. (2003), *Scottish Education in the Twentieth Century*, Edinburgh: Edinburgh University Press.
- Paterson, L. (2007), 'Potholes in the road to excellence', *Times Education Supplement Scotland*, 11 May.
- Paterson, L. (2009), 'Verdict: death by accident', *Times Education Supplement Scotland*, 22 May.
- Paterson, L. (2015), *Social Radicalism and Liberal Education*, Exeter: Imprint Academic.
- Paterson, L. (2018), *Scottish Education Policy: Why Statistics Matter*, Lecture at Moray House School of Education in Honour of Professor David Raffe, 26 March.
- Paterson, L. (2020), 'The experience of school in Scotland, 1970s to 1990s', *British Educational Research Journal*, 46(6), 1171-92.
- Paterson, L., Blackburn, L. and Weedon, E. (2019), 'The use of the Scottish index of multiple deprivation as an indicator to evaluate the impact of policy on widening access to higher education', *Scottish Affairs*, 28, 414-33.

- Priestley, M. and Sinnema, C. (2014), 'Downgraded curriculum? An analysis of knowledge in new curricula in Scotland and New Zealand', *Curriculum Journal*, 25(1), 50-75.
- Raffe, D., Brannen, K., Croxford, L. and Martin, C. (1999), 'Comparing England, Scotland, Wales and Northern Ireland: the case for "home internationals" in comparative research', *Comparative Education*, 35(1), 9-25.
- Richardson, J.T. (2015), 'Coursework versus examinations in end-of-module assessment: a literature review', *Assessment and Evaluation in Higher Education*, 40(3), 439-55.
- *Scotsman* (2021), 'Calls for sweeping reform as SQA scrapped following OECD report recommendations', 21 June.
- Scottish Government (2008), *Building the Curriculum 3: a Framework for Learning and Teaching*, Edinburgh: Scottish Government.
- Scottish Government (2019a), *Pupils in Scotland 2019*, Edinburgh: Scottish Government.
    - https://www.gov.scot/publications/summary-statistics-schools-scotland-no-10-2019-edition/pages/10/
- Scottish Government (2019b), 'Registered independent schools in Scotland: September 2019', Edinburgh: Scottish Government.
    - https://www.gov.scot/publications/independent-schools-in-scotland-register/
- Scottish Government (2020a), 'Independent review of Curriculum for Excellence: remit', Edinburgh: Scottish Government.
    - https://www.gov.scot/publications/independent-review-of-curriculum-for-excellence-remit/
- Scottish Government (2020b), *Evaluation of Attainment Scotland Fund - Third interim report - Year 4*, Edinburgh: Scottish Government.
    - https://www.gov.scot/publications/evaluation-attainment-scotland-fund-third-interim-report-year-4/
- Scottish Government (2021), *OECD Independent Review of Curriculum for Excellence 2020-2021: Initial Evidence Pack*, Edinburgh: Scottish Government.
    - https://www.gov.scot/publications/oecd-independent-review-curriculum-excellence-2020-2021-initial-evidence-pack/
- Stockard, J., Wood, T.W., Coughlin, C. and Rasplica Khoury, C. (2018), 'The effectiveness of direct instruction curricula: a meta-analysis of a half century of research', *Review of Educational Research*, 88(4), 479-507.
- Sweller, J. (2011), 'Cognitive load theory', in J.P. Mestre, B.H. Ross (eds), *Psychology of Learning and Motivation Volume 55*, Amsterdam: Elsevier, 37-76.
- *Times* (2021), 'Must do better', 22 June.
- TIMSS and PIRLS International Study Center (2021),
    - https://timssandpirls.bc.edu/index.html
- UK Statistics Authority (2018), *Code of Practice for Statistics*, London: UK Statistics Authority.
    - https://code.statisticsauthority.gov.uk/

Table 1

Curriculum policy connections of the institutions and people consulted by the OECD

From Annex B of OECD (2021). The titles of the organisations (second column), the sub-headings (first column), and the order in which all these appear are as in the report. The third column has been added here.

Category	Organisation or person	Relationship to policy-making on the curriculum and to its implementation
Scottish Education Council	Local Authority Director of Education and Regional Improvement Collaborative Lead Educational Institute of Scotland School Leaders Scotland General Teaching Council Scotland National Parent Forum Scotland Scottish Qualifications Authority	'The Scottish Education Council is the key forum for oversight of improvement in education in Scotland, as defined by the National Improvement Framework.' (https://www.gov.scot/groups/scottish-education-council/)
Scottish Practitioner Forum Representatives		Established by government agency Education Scotland 'to work as an advisory board to the OECD team'. (https://education.gov.scot/education-scotland/news-and-events/news/oecd-independent-review-of-curriculum-for-excellence/)
Scottish Government Learning Directorate Officials	Director of Learning Deputy Director, Curriculum, Qualifications and Gaelic Deputy Director Improvement, Attainment and Well-being OECD Review National Co-ordinator and Senior Phase Policy Lead	Government officials.
Scottish Qualifications Authority	Chief Executive Director of Qualifications Development	Government agency responsible for assessment.
Employers	Vice Chair of the Employer's Forum Co-Chair of Glasgow Developing Young Workforce Regional Group	'Developing the Young Workforce is the Scottish Government's Youth Employment strategy to better prepare young people for the world of work.' (https://www.dyw.scot/)
College representatives	Chief Executive, Colleges Scotland Chief Executive, College Development Network Deputy Director of Skills and Economic Recovery, Scottish Funding Council	The Scottish Funding Council is the government agency which funds and plans further education colleges and higher education institutions. Colleges Scotland and the College Development Network represent the colleges that receive this funding. Both are represented on the Curriculum and Assessment Board (see below).
Local Authorities	Executive Director of Education and Children's Services, Fife Council and Regional Improvement Collaborative Lead, South East Alliance Deputy Chief Executive and Director of People, South Ayrshire and Regional Improvement Collaborative Lead, South West Collaborative Executive Director of Education and Children's Services, Perth and Kinross and Regional Improvement Collaborative Lead, Tayside Collaborative	Local authorities manage publicly funded schools, and thus are responsible for implementing Curriculum for Excellence. They are grouped into Regional Improvement Collaboratives which work closely with Education Scotland.

	Director of Children's Services, Shetland and Regional Improvement Collaborative Lead, Northern Alliance	
	Lead Officer for Forth Valley and West Lothian Regional Improvement Collaborative	
	Director of Education, East Renfrewshire and Regional Improvement Collaborative Lead, The West Partnership	
	Director of Children's Services, Renfrewshire Council	
Education Scotland	Chief Executive	
	Strategic Director, Lifelong Learning	Government agency responsible for the curriculum.
	Head of Curriculum Innovation	
	Strategic Director for Scrutiny	
National Agencies (Skills)	Director of Critical Skills and Occupations, Skills Development Scotland	Skills Development Scotland is a government agency. Both it and the SCQF Partnership are represented on the Curriculum and Assessment Board (see below).
	Director of Career Information Advice and Guidance, Skills Development Scotland	
	Chief Executive, Scottish Credit and Qualifications Framework Partnership	
Community Learning and Development and Youthwork Representatives	Chief Executive, Youthlink Scotland	Semi-independent of government, but administers large grants on behalf of government (e.g. £3m to help recovery from the disruption caused by Covid-19: https://www.gov.scot/news/boost-for-scottish-youth-work/)
	Chair of Community Learning and Development Managers Scotland	Community Learning and Development Managers Scotland is represented on the Curriculum and Assessment Board (see below).
Scottish Attainment Challenge/Additional Support Needs Representatives	Senior Regional Advisor, Education Scotland	For Education Scotland, see above. The Additional Support for Learning Advisory Group was set up by government. (https://www.gov.scot/publications/right-thing-progress-report-scottish-governments-response-2008-concluding-observations/pages/16/)
	Chair of Additional Support for Learning Advisory Group	
Teacher Professional Learning and Leadership Representatives	Chief Executive, General Teaching Council Scotland	For Education Scotland and Local Authorities, see above. The GTC is the teachers' professional body, and is represented on the Scottish Education Council (see above).
	Director of Education, Registration and Professional Learning	
	Head of Professional Learning and Leadership, Education Scotland	
	Executive Director of Education, Glasgow	
Higher Education Representatives	Chair of the Scottish Council of Deans of Education and University of Aberdeen	Schools of Education are regulated by government in their work on education teachers. The Deans are represented on the Scottish Education Council (see above).
	Chair of Universities Scotland's Admissions Policy Group	Independent of curriculum policy.
	Member of the Commission for Widening Access: Access Delivery Group	The Commission for Widening Access was an inquiry set up by the Scottish government. The delivery group was set up by government to oversee the implementation of its recommendations. (https://www.gov.scot/publications/re-committing-fair-access-plan-recovery-annual-report-2021/pages/5/).

Education Researchers	Dr Keir Bloomer, Royal Society of Edinburgh, Education Committee	Independent of curriculum policy.
	Prof Louise Hayward, Professor of Educational Assessment and Innovation, University of Glasgow	Member of Curriculum and Assessment Board (see below).
	Prof Kay Livingston, University of Glasgow	Independent of curriculum policy.
	Dr Nicola Carse, Edinburgh University and Chair of Scottish Educational Research Association	Independent of curriculum policy.
Headteacher and Teacher Professional Bodies, Unions and Working Groups (1/2)	Association of Headteachers and Deputes in Scotland	Represents management in primary schools; represented on Curriculum and Assessment Board (see below).
	Headteacher Royal High School and Chair of the BOCSH Group	Headteacher association to support the implementation of Curriculum for Excellence. (https://bocsh-group.co.uk/)
Headteacher and Teacher Professional Bodies, Unions and Working Groups (2/2)	General Secretary, Educational Institute of Scotland	Trade Unions representing teachers and headteachers. Represented on Curriculum and Assessment Board (see below).
	General Secretary, Scottish Secondary Teachers' Association	
	National Official (Scotland), NASUWT (Scotland)	
	General Secretary, School Leaders Scotland	
Parent Organisations	Chief Executive Officer, Connect	Independent of curriculum policy.
	Vice Chair, National Parent Forum Scotland	Set up by government, and represented on Curriculum and Assessment Board (see below).
Learners and Young Person Organisations	Smart Services Director, Young Scot	Independent of curriculum policy, but in recent years has received annually approximately £1.3m-£1.5m funding from government, out of annual budgets of approximately twice that. (https://www.gov.scot/publications/foi-18-02018/; https://www.oscr.org.uk/about-charities/search-the-register/charity-details?number=SC029757)
	Joint Head of Children's Parliament	Independent of curriculum policy.
	Chief Executive of Children in Scotland	Independent of curriculum policy.
	Chief Executive of the Scottish Youth Parliament	Independent of curriculum policy.
Curriculum and Assessment Board	Headteacher, Harrysmuir Learning Community, West Lothian	Responsible for implementing Curriculum for Excellence. The full membership is at https://www.gov.scot/groups/curriculum-and-assessment-board/. For Harrysmuir primary school, see Table 2.
	Head of Humanities, Care and Services, Scottish Qualifications Authority	
	University of Stirling	
	Renfrewshire Council Chair of the ADES Curriculum Network	
	Chief Executive Education Scotland	
	Strategic Director, Lifelong Learning, Education Scotland	
	Chief Executive Scottish Credit and Qualifications Framework	
	Chair National Parent Forum Scotland	
	Locality Manager, Clydesdale South Lanarkshire Council, Education Resources	
	Assistant Secretary the Educational Institute of Scotland	

	Senior Director of Service Development and Delivery, Skills Development Scotland	
	Director of Service Design and Innovation Skills Development Scotland	
	National Executive Member, NASUWT Scotland	
	Director Scottish Council of Independent Schools	
	Assistant General Secretary Scottish Secondary Teachers' Association	
	Deputy Associate Principal, University of Strathclyde	
Scottish Parliament Education and Skills Committee	Clare Adamson MSP (Convener)	
	Daniel Johnson MSP (Deputy Convener)	
	Alasdair Allan MSP	
	Kenneth Gibson MSP	
	Iain Gray MSP	
	Jamie Greene MSP	Independent of curriculum policy.
	Ross Greer MSP	
	Jamie Halcro Johnston MSP	
	Rona Mackay MSP	
	Beatrice Wishart MSP	
	Five Parliament officials	
Gaelic Education Groups	Director of Education, Bòrd na Gàidhlig	
	Chair, Stòrlann Nàiseanta	Closely involved in the development of Gaelic-Medium Education.
	Parental Officer, Comann nam Pàrant	
	Chief Executive, Fèisean nan Gàidheal	
Subject-Specific Interest Groups	Arts and Learning Manager, Edinburgh City Council	
	Senior Education Officer for Health and Well-being, Education Scotland	
	Chair, Scottish Association of Language Teachers	
	ADES Representative, National Profile Raising Group	All with responsibility for particular curricular areas in the Curriculum for Excellence.
	Senior Education Officer for Religious and Moral Education	
	STEM Representative, Institute of Physics	
	Representative from Royal Geographical Society of Scotland	
	Representative from Technology Teachers Association	
Meeting with Colleges, Employers and Community Learning and Development Representatives	Principal, Forth Valley College	
	Principal and Chief Executive, West Highland College (University of the Highlands and Islands)	All with responsibility for aspects of implementing the Curriculum for Excellence.
	Community Benefit Co-ordinator, CCG Construction Group	For KEAR campus, see Table 2.
	HR Manager, CCG Construction Group	
	Community Learning and Development, Curriculum Lead, KEAR Campus School	

Virtual Visit to Forehill Primary School, South Ayrshire		See Table 2.
Virtual visit to Tiree High School and Oban High School		See Table 2.
Focus Group Meeting with National Parents Organisations	People nominated by National Parent Forum Scotland and Connect	See above for National Parent Forum and Connect.
Virtual Visit to Castlemilk High School, Glasgow		See Table 2.
Focus Group Meeting with School-age Learners from	Calderglen High School, South Lanarkshire	See Table 2.
	Grove Academy, Dundee	See Table 2.
	Stewarton Academy, East Ayrshire	See Table 2.
Focus Group Meeting with Headteachers from	Newbattle High School, Midlothian	See Table 2.
	Portlethen Academy, Aberdeenshire	See Table 2.
	Duncanrig Secondary School, South Lanarkshire	See Table 2.
	Hazelhead Primary School, Aberdeen	See Table 2.
	E-Sgoil	Normally an agency of Na h-Eileanan Siar, the local authority for the Western Isles, but temporarily also a source of online materials during the period when school buildings were closed because of Covid-19, funded by the Scottish government.
Virtual Visit to Aberdeen Grammar School		See Table 2.
Focus Group Meeting with Teachers from	Belmont Academy, South Ayrshire	See Table 2.
	Earlston High School, Scottish Borders	See Table 2.
	Hillhead High School Glasgow	See Table 2.
	Inveralmond Community High School	See Table 2.
	Grange Primary, Angus	See Table 2.
	Gartocharn Primary, West Dunbartonshire	See Table 2.
	Principal Teacher and Pedagogy Group Lead, West Lothian Inclusion Service	For Local Authorities, see above.
	Calderglen High School, South Lanarkshire	See Table 2.
Focus Group Meeting with Post-school Learners	4 university students, 2 college students, 2 post-school learners involved in youth work	
Additional meetings	Professor Mark Priestley, University of Stirling	Member of Curriculum and Assessment Board.
	Professor Chris Chapman, University of Glasgow	Members of the Scottish government's International Council of Education Advisers.
	Professor Graham Donaldson, University of Glasgow	(https://www.gov.scot/groups/international-council-of-education-advisers/)
	Professor Andrew Hargreaves	

Table 2
Characteristics of the schools represented in the OECD's consultation

School name	Local authority	Type of OECD consultation (see Table 1)	Number of pupils	% registered for free school meals	% white UK
Special					
KEAR campus	South Lanarkshire	Policy group	65	Not available	90%+
Primary					
Forehill	South Ayrshire	visit	449	10-<20%	90%+
Grange	Angus	teacher group	350	0-<10%	80-<90%
Gartocharn	West Dunbartonshire	teacher group	81	10-<20%	90%+
Harrysmuir	West Lothian	policy group	397	30-<40%	70-<80%
Hazelhead	Aberdeen	headteacher group	318	10-<20%	70-<80%
Weighted average				18	84
Scotland (publicly funded)				21	83

Secondary

School name	Local authority	Type of OECD consultation (see Table 1)	Number of pupils	% registered for free school meals	% white UK	% 5+ awards at SCQF 5	% 5+ awards at SCQF 6
Tiree	Argyll and Bute	visit	37	0-<-10%	90%+	Not available	Not available
Oban	Argyll and Bute	visit	943	10-<-20%	80-<90%	59	28
Castlemilk	Glasgow	visit	454	50-<60%	80-<90%	44	24
Aberdeen Grammar	Aberdeen	visit	1126	0-<10%	50-<60%	75	53
Belmont	South Ayrshire	teacher group	1251	10-<20%	90%+	69	35
Earlston	Borders	teacher group	1086	0-<10%	90%+	84	55
Hillhead	Glasgow	teacher group	1084	20-<30%	40-<50%	60	39
Inveralmond	West Lothian	teacher group	1056	20-<30%	80-<90%	70	47
Calderglen	South Lanarkshire	student group & teacher group	1397	10-<20%	90%+	69	35
Grove	Dundee	student group	1302	0-<10%	80-<90%	78	46
Stewarton	East Ayrshire	student group	772	0<-10%	90%+	71	39
Newbattle	Midlothian	headteacher group	1004	10-<20%	90%+	41	12
Portlethen	Aberdeenshire	headteacher group	848	0-<10%	80-<90%	63	32
Duncanrig	South Lanarkshire	headteacher group	1703	10-<20%	90%+	73	44
Weighted average				14	85	68	39
Scotland (publicly funded)				17	86	64	36

All school data are for 2018-19. In the special school, the data relate to all pupils. In primary schools, they relate to a combination of P1, P4 and P7. In secondary schools, the demographic data relate to S3, and the attainment data to school leavers from S4-S6. The information on free school meals and white UK ethnic group is recorded in the dashboard only in the broad bands shown here. For the purposes of the averages weighted by the number of pupils, each band is represented by its mid-point (e.g. 5 for 0-10%).

Source: Scottish Schools Information Dashboard:

special: https://public.tableau.com/app/profile/sg.eas.learninganalysis/viz/SchoolInformationDashboard-Special/SpecialDashboard

primary: https://public.tableau.com/app/profile/sg.eas.learninganalysis/viz/SchoolInformationDashboard-Primary/PrimaryDashboard

secondary: https://public.tableau.com/app/profile/sg.eas.learninganalysis/viz/SchoolInformationDashboard-Secondary/SecondaryDashboard