

Assessment of compliance with the Code of
Practice for Statistics

Achievement of Curriculum for Excellence Levels statistics

(produced by Scottish Government)

Office for Statistics Regulation

We provide independent regulation of all official statistics produced in the UK. Statistics are an essential public asset. We aim to enhance public confidence in the trustworthiness, quality and value of statistics produced by government.

We do this by setting the standards they must meet in the [Code of Practice for Statistics](#). We ensure that producers of government statistics uphold these standards by conducting assessments against the Code. Those found to comply with the standards of trustworthiness, quality and value in the Code are given accredited official statistics status (called National Statistics in the Statistics and Registration Service Act 2007). We also report publicly on system-wide issues and on the way statistics are being used, celebrating when the standards are upheld and challenging publicly when they are not.

Executive Summary

Why we carried out this assessment

- ES.1 The [Achievement of Curriculum for Excellence \(CfE\) Levels statistics](#) are published annually by Scottish Government and provide information on national performance in Scotland in literacy and numeracy.
- ES.2 Scottish Government asked the Office for Statistics Regulation (OSR) to assess the Achievement of CfE Levels statistics. In requesting this assessment, the statistics team at Scottish Government has demonstrated its commitment to produce statistics that meet the standards required of accredited official statistics under the Code of Practice for Statistics.
- ES.3 Our assessment found widespread good practice in the production of these statistics. We have identified four actions for Scottish Government to fulfil in order for the Achievement of CfE Levels statistics to become [accredited official statistics](#) (called National Statistics in the Statistics and Registration Service Act 2007). Once the statistics team demonstrates that these steps have been undertaken, OSR will recommend that the UK Statistics Authority confirm the accredited official statistics status.

Introduction

- 1.1 The [Achievement of Curriculum for Excellence \(CfE\) Levels statistics](#) were first published in 2015/16 following the introduction of the Curriculum for Excellence in Scotland in 2010/11 and replaced statistics produced from the [Scottish Survey of Numeracy and Literacy](#). This assessment considered the extent to which these statistics meet the standards of Trustworthiness, Quality and Value as set out in the [Code of Practice for Statistics](#).
- 1.2 The Achievement of CfE Levels statistics provide information on national performance in Scotland in literacy and numeracy, based on all pupils in publicly funded Primary 1 (ages 5-6), Primary 4 (ages 8-9), Primary 7 (ages 11-12), and Secondary 3 (ages 14-15) classes, and for all pupils based in special schools and units. These statistics are the only source of information on attainment of pupils in primary schools in Scotland.
- 1.3 It is important to note that we have not assessed the Curriculum for Excellence itself. While the introduction of the Curriculum for Excellence was a significant change in education policy in Scotland, it is not our role to assess, or form judgements on, policy changes themselves. Our role is to assess the statistics that are produced and reported by the Scottish Government on this policy.
- 1.4 The data are provided to Scottish Government by Local Authorities (LAs) and grant-aided schools and are based on teachers' professional judgements of children's progress. These professional judgements are based on a wide range of evidence collected by teachers during the ongoing assessment of children and young people's learning. This includes observing children and young people at work, assessing their work in class, standardised assessments and assessing children and young people's knowledge and understanding by talking to them about their learning.
- 1.5 The Curriculum for Excellence, as a policy, placed greater reliance on the professional judgements of teachers. The decision to use this approach is a product of the Curriculum for Excellence policy and is not within the scope of this assessment. However, we have considered how the statistics based on the teacher judgements align with the Code of Practice for Statistics, including the extent of the quality assurance processes applied. This is explored in more detail in paragraph 1.11.
- 1.6 The statistics were published as [official statistics in development](#) (previously referred to as experimental official statistics) for the first three years and have been published as official statistics since 2018/19. Scottish Government made the decision to remove the 'in development' label and publish as official statistics based on user feedback, robust methods and sufficient coverage; more information can be found in this [Evidence Paper](#).
- 1.7 The key users of the Achievement of CfE Levels statistics include Scottish Government, Education Scotland, LAs, HM Inspectors and Schools. The statistics are primarily used by Scottish Government to measure progress against initiatives on attainment such as the [National Improvement Framework](#). The National Improvement Framework underpins the [Scottish Attainment Challenge](#) which focuses on achieving equity in educational outcomes with a particular focus on

closing the poverty-related attainment gap. This challenge provides stretch aims for LAs and supports a range of initiatives and programmes across Scotland.

- 1.8 As part of the evidence for this assessment we conducted 14 interviews with a range of key users within Scottish Government and across the wider education space. We also conducted an online questionnaire to gather views on the statistics, which received five responses.

Findings

Communication of the quality of the statistics

- 1.9 The assessments of children’s progress against the Curriculum for Excellence (CfE) levels are based on teacher professional judgements in schools. These professional judgements are based on a wide range of evidence collected by teachers during the ongoing assessment of children and young people's learning. This includes observing children and young people at work, assessing their work in class, standardised assessments and assessing children and young people's knowledge and understanding by talking to them about their learning.
- 1.10 Through our stakeholder engagement, we heard from users within Scottish Government that they had a good level of trust in the quality of the statistics. However, we also identified that some academics had concerns about the quality of the statistics, primarily as a result of the use of teacher judgements.
- 1.11 Whilst we recognise that there will always be an element of subjectivity to these teacher judgements, based on the evidence gathered as part of this assessment, we are content that there is a strong quality assurance framework in place and that the process is robust. An overview of the quality assurance process is as follows:
- a. The teacher judgements are based on [national benchmarks](#) set by Education Scotland and are informed by a range of evidence.
 - b. Education Scotland works closely with schools to provide guidance on the teacher judgements, to improve data quality and to support moderation activities. The moderation process aims to ensure consistency in judgements across schools and Local Authorities (LAs) and is supported by the use of Quality Assurance and Moderation Support Officers.
 - c. Moderation is undertaken at different levels as set out in Scottish Government’s 2019 [Achievement of CfE Levels – Official Statistics Evidence paper](#).
 - d. Teacher judgements are submitted to the corresponding Local Authority (LA) by schools. Each LA undertakes its own quality assurance before submitting the data to Scottish Government in line with the [data specification](#).
 - e. The data is submitted through ScotXed and is subject to a number of automatic validation checks that must be passed.
 - f. Once a successful submission has been received, a second round of quality assurance is conducted by Scottish Government and potential issues are queried with LAs.
 - g. As part of the submission process, LAs also provide information on the quality of the data through a survey.
- 1.12 It is our view that many of the concerns regarding the consistency of teacher judgements were a result of a lack of detailed information available to users on the quality assurance processes in place. In order to strengthen the credibility of the Achievement of CfE Levels statistics, Scottish Government should provide users with a greater level of detail on the quality assurance processes that are undertaken at each stage of data collection and processing.
- 1.13 As noted above, Scottish Government collects information on data quality from each LA through a survey. This information is useful in monitoring overall data

quality and Scottish Government publishes a brief summary of this information in the methodology section of the background notes to the statistics. In order to communicate potential uncertainty and to ensure that users are able to draw reliable conclusions from the statistics, Scottish Government should provide more detail on the information gathered from the quality survey where possible. It would also be beneficial for Scottish Government to demonstrate their commitment to continuous improvement by setting out how the information in this survey is used to improve the quality of future data collections.

- 1.14 Scottish Government provides a good level of detail about the methods used to produce the statistics in the background notes section of the bulletin. This includes information on pupils in special schools or standalone special units, derived variables, Gaelic-medium education and data matching. Scottish Government also provides information on the limitations of the data. One such limitation is the way in which pupils with complex needs are treated across different LAs, with some LAs placing these pupils into special schools/standalone special units and others integrating into mainstream schools. In order to support users in drawing accurate comparisons between LAs, we encourage Scottish Government to provide additional information on this limitation, such as the approach taken by each LA where known.
- 1.15 There have been several changes to the statistics since they were introduced in 2015/16 including the relabelling from official statistics in development to official statistics in 2018/19. In addition, COVID-19 prevented the statistics being collected in 2019/2020 and impacted the 2020/2021 collection. As this is still a relatively new collection this means that the comparable time series is somewhat limited, but Scottish Government is confident that the series will be stable in future. Scottish Government provides useful information in the background notes on the uncertainty of comparing the statistics over time due to changing methodology and how this affects how they can be interpreted. This includes a clear [flowchart](#) demonstrating how the data and the robustness of the statistics have changed over time. Further information around the impact of COVID-19 on data collection and quality can also be found in the background notes with detail on how many LAs were impacted.
- 1.16 Due to the devolved nature of education, we acknowledge that it can be difficult to draw direct comparisons across the UK nations. It is positive that Scottish Government provides signposting links to the relevant websites for the other UK nations within the statistical bulletin. We encourage Scottish Government to provide more information, where possible, on the key differences and the level of comparability with the other UK nations in order to support research and analysis at a UK level.

Requirement 1: In order to strengthen the credibility of the Achievement of CfE Levels statistics, Scottish Government should provide users with a greater level of detail on the quality assurance processes that are undertaken at each stage of data collection and processing. This includes providing detailed information on the quality checks undertaken by LAs and by Scottish Government and how this quality information is used to improve the statistics.

User engagement

- 1.17 We identified a varied user base for the Achievement of CfE Levels statistics within the education sector in Scotland including Scottish Government, Education Scotland, LAs and schools. The Achievement of CfE Levels data are the only pupil attainment measures in Scotland prior to secondary school formal exams, so Scottish Government policy makers and other officials are regular users of the statistics in order to evaluate the success of the Curriculum for Excellence. Users within Scottish Government told us that they regularly communicated with the statistics team on issues such as uncertainty and confidence levels to support their own interpretation when presenting the data to ministers.
- 1.18 The data are also used alongside a suite of measures to assess progress towards closing the poverty-related attainment gap as part of the [National Improvement Framework](#). Understanding the levels of deprivation using the [Scottish Index of Multiple Deprivation \(SIMD\)](#) and how they affect pupil attainment is particularly important for LAs and academic users undertaking research in this area.
- 1.19 HM Inspectors within Education Scotland evaluate detailed school performance by analysing raw data at school level which they obtain through a data sharing agreement with Scottish Government.
- 1.20 In general, the users that we spoke to were aware of the developments that had been made to the statistics since their introduction including the relabelling from official statistics in development when they were first launched in 2015/16 to official statistics in 2018/19. Users reported that the gap in data collection during the school closures as a result of COVID-19 had affected the year-on-year comparability in recent years but that the reasons had been explained well in the bulletin.
- 1.21 There are relatively few users of the Achievement of CfE Levels statistics outside of the education sector and these users were primarily in academia. We heard from a few academics that they were aware of the statistics but that they were cautious about using them due to their concerns regarding the perceived quality of the statistics. We consider that building stronger relationships with the academic community will enable Scottish Government to address these concerns and strengthen the credibility of the statistics.
- 1.22 Given that these statistics provide a unique perspective of attainment throughout the Scottish education system we consider that there is the potential to widen the user base further including to parents, researchers, and other interested parties. Expanding the user base would increase the value offered by the statistics and would enable Scottish Government to provide further assurance on the reliability of teacher judgements. We recognise the current resource constraints on the Achievement of CfE Levels team, however we consider that, where possible, Scottish Government should seek to understand their potential user base beyond the education sector and proactively engage with these potential users to raise awareness of the statistics and increase trust in the statistics.
- 1.23 Some users outside of Scottish Government that we spoke to, including those in academia, felt that there had been minimal engagement with them by Scottish Government on these statistics in recent years. The Code of Practice for Statistics states that users and other stakeholders should be involved to help prioritise statistical plans. In order to maximise the public value from this important data source, we recommend that Scottish Government engages proactively with users to seek feedback on the statistics including potential areas for improvement. To

support this engagement and to keep users informed, Scottish Government should publish a workplan detailing plans for the ongoing development of the statistics.

Requirement 2: Scottish Government should identify and proactively engage with users outside of the education sector, with a primary focus on academia, to raise awareness of the statistics, increase the credibility of the statistics, and to publicly seek the input of users on potential developments.

Public value

- 1.24 The Achievement of CfE Levels statistics are published on a timely basis with the collection taking place in August, based on a census date in June, and the statistical bulletin published in December.
- 1.25 On the whole, users were content with the frequency and timeliness of the statistics. The timeliness of the data was mentioned by some users who thought there was slight time lag between collecting the data from schools based on a census in June and publishing the statistical outputs in December. However, most users understood the reasons for this being due to the rigorous quality checks that the school submissions go through combined with the schools' summer holidays and the start of the academic year. In general, the annual frequency was considered adequate as long as there was assured quality and users understood the need to balance this with the burden on teachers.
- 1.26 The Achievement of CfE Levels statistical bulletin presents detailed breakdowns by various demographic and socio-economic variables including Scottish Index of Multiple Deprivation (SIMD), pupil characteristics, and by LA. Generally, the users that we spoke to were happy with the level of detail that was provided in the statistical bulletin. We heard how the statistics help users to understand the national picture, trends across councils, gender breakdowns and further information about pupils with additional support needs (ASN), amongst other areas of interest.
- 1.27 Since the introduction of the statistics in 2015/16, Scottish Government has undertaken a large amount of work in developing the statistics and embedding the quality assurance processes. Scottish Government is now confident that the production of the statistics has stabilised and so we consider this to be a good opportunity for Scottish Government to explore additional insights that could be drawn from the statistics where available resources allow. For example, some users expressed that cohort-level data at a national level would be beneficial so that users could track cohort series through the years and evaluate their attainment levels.
- 1.28 In addition to the statistical bulletin and data tables, Scottish Government produces [primary school](#) and [secondary school](#) information dashboards which contain a wealth of school-level information drawn from different sources including some measures from the Achievement of CfE Levels statistics. Many users we spoke to were unaware of these dashboards or had experienced technical issues whilst using them. Based on our own research it was not clear what type of user the dashboards were aimed at, or how Scottish Government were engaging with these users to raise awareness of the dashboards and to seek feedback on potential improvements.
- 1.29 We consider that the dashboards have the potential to be an important source of school-level and comparator data to non-expert users such as parents and school staff. While the Achievement of CfE Levels statistics team does not maintain the

dashboards, it would be beneficial for the team to work with the relevant teams across Scottish Government to identify the needs of the dashboard users and the extent to which these are being met, to promote the dashboards to wider users and to seek input on potential improvements.

Requirement 3: Scottish Government should explore and, where possible, produce new analysis to provide additional insights into the data, for example a cohort-based series. In addition, Scottish Government should maximise the value of the dashboards through identifying user needs, promoting the dashboards to wider users, and implementing improvements where needed.

- 1.30 The Code of Practice states that opportunities for data sharing and data linkage to enable the reuse of data should be taken wherever feasible. We understand that work is currently underway to make the Achievement of CfE levels data available on the Administrative Data Research Scotland data platform. We consider that making the data available for further use by approved external researchers would greatly increase the value of the data and the potential insights that can be drawn. We welcome Scottish Government's ongoing work in this area and encourage the statistics team to consider additional ways that they could increase the reuse of these statistics.

Requirement 4: Scottish Government should promote the reuse of the statistics, for example, making them available through a secure platform allowing for data linkage and external research.

