

RSE Education Committee response to Scottish Government consultation on enhanced data collection for improvement



Summary

The Royal Society of Edinburgh's (RSE) Education Committee welcomes Scottish Government's consultation on enhanced data collection for educational improvement, following on from relevant recommendations made by both the Organisation for Economic Co-operation and Development (OECD)¹ and Audit Scotland² in their respective publications. The RSE supports the need for more systematic, integrated, and robust data gathering which adequately captures the full breadth of learning and attainment, from formal qualifications to more qualitative markers of personal development. The type of data that is collected is ultimately a reflection of what Scotland has decided constitutes 'success' for its education system. However, these parameters are often too narrow and rigid, prioritising traditional pathways and outcomes that may not be appropriate for every pupil, nor for society at large as it contends with increasingly daunting 'grand challenges' that demand ingenuity, creativity, and adaptability from the citizens of tomorrow. While the current education reform agenda espouses this broader thinking, our current metrics remain out of step and so are ripe for re-evaluation.

We must also be clear on the power of data. As a society, we must ensure that data is being communicated and used responsibly and for its intended purpose rather than to uphold popular narratives. We must also discourage gathering data solely as a tool for delivering accountability, recognising the perverse incentives this can introduce.

We hope the below response is useful in setting out our views and recommendations on the current consultation. We would be pleased to meet with Scottish Government to discuss this response in more detail.

¹ OECD. (2021, 21 June). *Scotland's Curriculum for Excellence: Into the Future*.

<https://www.oecd.org/education/scotland-s-curriculum-for-excellence-bf624417-en.htm>.

² Audit Scotland. (2021, 23 March). *Improving outcomes for young people through school education*.

<https://www.audit-scotland.gov.uk/publications/improving-outcomes-for-young-people-through-school-education>.

Q1: Our proposals for the key measures of progress towards closing the poverty related attainment gap are based on a number of key principles set out above. Are there any other principles that should be included?

As a reminder, these principles are as follows:

Our proposals for the key measures are based on a number of key principles:

- we are looking at the difference in attainment between those children and young people from SIMD quintiles 1 and 5. However, we recognise the importance of increasing attainment for all children and are therefore proposing to recalibrate the national stretch aims for all five SIMD quintiles
- focusing on a single measure is neither helpful or meaningful and would provide a false and limited picture
- measures and milestones should be relatively simple to measure and report against
- there needs to be a clear line of sight from the agreed measures and milestones to the key priorities set out in the National Improvement Framework, including the need to place the human rights and needs of every child and young person at the centre of education
- there also needs to be a clear line of sight from the key measures in the NIF, to the strategies and approaches adopted in schools, and local authorities, to improve outcomes for children and young people
- the focus should be across the age ranges – from 3-18
- they should be a credible set of measures – understood to fairly reflect progress in closing the poverty related attainment gap
- the need to avoid perverse incentives through whatever milestones or stretch aims are set.

1. We question **the utility of using the Scottish Index of Multiple Deprivation (SIMD) as the sole proxy for disadvantage**, given it operates on the level of the neighbourhood rather capturing household or individual cases of disadvantage.^{3,4} As such, we may need to devise a more discriminating measure to ensure these outliers are not ignored. The Sutton Trust has compared different proxy measures of disadvantage and how accurately these reflect individual cases of socioeconomic disadvantage.⁵

Q2: Should the two sub-measures covering attendance and exclusion at secondary schools be promoted to key measures?

There are currently four sub-measures covering attendance and exclusion in both primary and secondary schools, and there is a clear pattern of higher exclusion rates and lower attendance for children living in the most deprived areas. This is particularly the case at secondary school and prompts the question about whether to promote the two secondary school sub-measures. If children are not at school, then it is far more difficult to take the steps necessary to close the attainment gap.

2. **While attendance impacts upon attainment and labour market outcomes, the relationship is much more nuanced** than a simple direct correlation (for example, the type and timing of absence will impact upon attainment differently). Therefore, if attendance is to be promoted to a key measure, the data must be collected in a systematic and detailed way to ensure these subtleties are captured. There are also **broader biases (whether conscious or otherwise) that can influence how attendance is regarded and acted upon in the school setting**, with learners from certain families or backgrounds potentially more likely to have their absences labelled as truancy than their more affluent peers, whose absences may be viewed more compassionately.

3. **We are not convinced that exclusion should be promoted to a key measure**, given that exclusion can still take place within a school setting and so efforts to reduce it may not be effective in practice.

³ Klein, M., Sosu, E. & Dare, S. (2020). Mapping inequalities in school attendance: the relationship between dimensions of socioeconomic status and forms of school absence. *Children and Youth Services Review*, 118. <https://doi.org/10.1016/j.chilcyouth.2020.105432>.

⁴ Sosu, E. & Schmidt, P. (2022). Changes in cognitive outcomes in early childhood: the role of family income and volatility. *Frontiers in Psychology*, 13, Article 758082. <https://doi.org/10.3389/fpsyg.2022.758082>.

⁵ Jerrim, J. (2021). *Measuring disadvantage*. Research brief. The Sutton Trust. <https://www.suttontrust.com/wp-content/uploads/2021/05/Measuring-Disadvantage.pdf>.

Q3: Should data on confidence, resilience, and engagement from the new health and wellbeing census be included in the basket of measures?

In terms of health and wellbeing, three of the existing key measures already cover the social, emotional, and behavioural development of children and young people, and four of the fifteen sub-measures cover mental wellbeing. However, there will be data collected from the Health and Wellbeing Census which will be included as part of the indicator of educational attainment in the [National Performance Framework](#).

These are:

- Confidence of children and young people
- Resilience of children and young people
- Engagement in extra-curricular activities

4. It can be challenging to measure these more qualitative indicators of attainment in a meaningful, objective, and consistent way, which does not negate the value of doing so. However, the **'resilience' metric is potentially problematic** in that it is often framed as an individual characteristic rather than the result of having access to the requisite support structures.

5. We would also welcome the introduction of metrics pertaining to **self-control and self-regulation**, as the literature indicates these are significantly correlated with a host of outcomes later in life such as risk-taking in adolescence, health, earnings, public safety, and a slower ageing process.⁶

Q4: At the moment, the measure of achievement in the senior phase is the National Qualifications achieved by young people at the point which they leave school (SCQF levels 4, 5, and 6 – 1 or more on leaving school). Do we need to add other measures to cover wider achievement and attainment?

Q5: If you answered yes, some options for consideration are set out below. However, we would also welcome any other suggestions for additional measures:

Option 1

In response to feedback from users, and to improve the evidence base on the attainment of broader achievements and skills as part of the Curriculum for Excellence, a new 'all SQA qualifications' measure has been developed which includes National Qualifications (National Courses, Skills for Work) and other SQA qualifications (Customised Awards, Higher National, National – Workplace, National Certificates, National Progression Awards, Professional Development Awards, Scottish Vocational Qualifications, Ungraded National Courses). Details can be found in [section 6.3 of the School Leaver Attainment and Initial Destinations publication](#). The 'all SQA qualification' measure details the proportion of school leavers who attained a number of passes (e.g. one pass or more, two passes or more etc.) at a given SCQF level or better across all of the qualifications outlined above. One or more combination(s) of passes and SCQF levels could potentially be used.

These statistics are currently labelled as Experimental Statistics, reflecting that they are undergoing development and subject to revision based on informed feedback from users.

⁶ Moffitt Terrie, E., Arseneault, L., Belsky, D., Dickson, N., Hancox Robert, J., Harrington, H., . . . Caspi, A. (2011). A gradient of childhood self-control predicts health, wealth, and public safety. *Proceedings of the National Academy of Sciences*, 108(7), 2693-2698. <https://doi.org/10.1073/pnas.1010076108>.

Option 2

A measure of attainment in vocational qualifications. Section 6.1 of the [School Leaver Attainment and Initial Destinations publication](#) contains a measure covering only 'vocational' qualifications. Unlike the existing NIF key measures on school leaver attainment and the 'all SQA qualifications' measure outlined above, this measure does not include attainment in National Qualifications but focuses on vocational qualifications. Specifically, the measure includes National Certificates, Higher National Qualifications, Scottish Vocational Qualifications, National Progression Awards and Skills for Work. It shows the proportion of school leavers with one pass or more at a given SCQF level. The proportion of school leavers with one pass or more at SCQF level 5 or better is used as a Key Performance Indicator for Developing Scotland's Young Workforce.

6. Given their interconnectedness, we have opted to answer questions 4 and 5 together.

7. We express **strong support for the need for other measures** to cover wider achievement and attainment. Scotland has the benefit of the Scottish Credit and Qualifications Framework which incorporates qualifications and awards across the learning and skills spectrum. While Insight captures a wider range of attainment, this is not widely distributed and can often create perverse incentives if used to measure school performance.

8. Of the two options presented in question 5, **option 1 is preferable but still falls short** of what is required to achieve true parity of esteem across different forms of attainment, learning, and personal development. As part of this, there should be recognition of wider forms of qualifications beyond just Higher and National qualifications to include the wider suite of SQA qualifications and awards as well as those from other high-quality awarding bodies.

9. Having reliable longitudinal data to track success and outcomes as they relate to different pathways

will be critical in gaining greater societal approval for 'non-traditional' pathways (e.g. those outwith university streams) and in identifying and mitigating any adverse impacts on equality. For example, if disadvantaged pupils tend to favour certain pathways, it is important to ensure that this is not because of a lack of opportunity within their educational institution. Alternative pathways should be equally accessible to all learners and their value and contribution seen as equally positive as the conventional university route. Historical data could provide such evidence but there will be a need to establish sustainable long-term studies of employment and career paths over the longer term. Data has shown that 'graduate premiums' have been declining with the increased uptake of university qualifications, such that university degrees do not necessarily afford the same labour market benefits to graduates as they once did. The challenge to achieve a just transition will require a significant number of people with technical and vocational skills to enter the labour market, and retraining for those already working. Alternative forms of attainment may become increasingly important as employers look to fill skills gaps. Additionally, **such studies could emphasise the increasingly important role of colleges in training adaptable and flexible graduates** that can thrive in an unpredictable labour market and provide the skills that society will need to overcome the challenges of the 21st century.

10. It is understood that an Education and Skills Impact Framework, which will link education data with Her Majesty's Revenue and Customs tax data and is being undertaken by Skills Development Scotland, the Scottish Funding Council, and the Scottish Government, as well as the strategic board's analytic unit, is still in progress (with initial findings produced in April 2022). This could be a step in the right direction in terms of determining the relative outcomes of higher education, further education, and modern apprenticeships from the perspective of the individual, government, and employers.

11. Alternative pathways and qualifications need to be afforded the same media and political attention and support

in order to promote a culture shift towards wider societal acceptance. As one prominent example, exam results receive considerable media and political coverage every summer, though the narrative centres on the number of Highers achieved rather than the totality of achievement that takes place. The language used and the focus given to the results of the summer diet by politicians, the media, and the public (including a focus on the numbers entering degree programmes) have a significant impact on the perception of value given to other qualifications and pathways. This is a serious issue that must be addressed.

Q6: In terms of measuring progress beyond school, should the percentage of school leavers going to a 'positive destination' on leaving school be included alongside the participation measure?

Positive destinations for young people leaving school include Higher Education, Further Education, Employment, Training, Voluntary Work and Personal Skills Development (while other destinations include unemployed and seeking work, unemployed and not seeking work and unknown). These provide valuable information on the activities being undertaken by school leavers. However, they are based on a snapshot of the activity being undertaken by school leavers on a given day and are not the best indicator of long term sustained success for young people accessing future work or study.

That is why the indicator we have used previously is the [Skills Development Scotland Annual Participation Measure](#), which reports on the wider activity of the 16-19 cohort, including those still at school. This is an indicator of school success in preparing young people for access to future work or study.

12. Information on sustained positive destinations and longitudinal career pathways are important as these gives a better indication of the extent to which learners are leaving school with the transferable knowledge and skills to be successful across a range of settings and sustained over the long-term.

Q7: What more do we need to do in order to ensure that a wider range of measures are in use across the education system, and that they are valued as equally as traditional attainment measures?

13. Societal values are a key and significant driver of educational priorities, as evidenced by a fixation on national qualifications every summer to the detriment of recognising and valuing other forms of attainment.

14. Educational metrics should be defined by the goals that have been set for the education system; currently, the metrics are often geared towards tracking the most conventionally valued pathways or outcomes (e.g. the number of pupils who make it to university) without considering whether the wider benefits of education to the individual and society are being realised. To this end, collecting data on the breadth and interdisciplinarity of learning as enshrined in the Curriculum for Excellence's (CfE) four contexts for learning could serve as a key indicator of whether these broader aims are being met. While the system outwardly values both, our dominant metrics continue to rely on subject-based attainment rather than a more holistic measure of learning.

15. It will be important to take up the challenge of convincing parents, universities, employers, and wider society of the validity of these different pathways and outcomes in order to arrive at a more sensitive and integrated measure of educational performance.

16. Schools and other institutions also have a responsibility to engage with their local communities as enshrined in CfE's four contexts for learning to identify the different types of opportunities that exist for learners in their schooling and in their careers so that different pathways can be understood and equally championed. Learners often rely on their families or on their schools for career advice yet the guidance they receive can often be traditional or narrow, continuing to push students in particular directions without exposing them to the full breadth of opportunities that are available to them. Tied into this is a perhaps long overdue reconsideration of the age and stage at which learners are expected to make decisions about their futures.

17. While we should strive for parity of esteem between different pathways, we must also acknowledge and address the potential barriers that exist to learners accessing them, particularly in the context of the available school curriculum and the prevailing funding models for post-secondary education.

Q8: Are the existing wider data collections, and the new data developments enough to ensure that the National Improvement Framework reflects the ambitions of Curriculum for Excellence, national policy priorities such as health and wellbeing and confidence, and key priorities for Covid-19 recovery and improvement, as recommended by Audit Scotland?

Q9: How can we make better use of data to focus and drive improvement activity at school, local, regional and national level?

18. Given their interconnectedness, we have opted to answer questions 8 and 9 together.

19. There is still a national debate about the aims of the national curriculum, which will continue as part of the 'national discussion' recommendation mentioned by Professor Ken Muir's review⁷ and accepted by Scottish Government; until these aims are clarified, we cannot know which metrics are most appropriate in evaluating its implementation and performance.

20. The poverty-related attainment gap and other forms of disadvantage will likely take generations to effectively address, which is **incompatible with political timescales which tend to insist on immediate results**. We must therefore also measure and value incremental improvement that reflects the complexity of the challenges the system is facing. As part of this, the system should refrain from focusing exclusively on ambitious milestones and instead seek to define and assess the **outcomes and experiences that serve as leading indicators of material and lasting change down the line** - in other words, how do we recognise and reward schools for positive actions that may not improve attainment immediately but that are laying the groundwork for more robust and sustained improvement in the future?

21. We also **need to be realistic about the part that schools play in learner attainment**: while they are inarguably important, learners are also incredibly impacted by their home, family, and wider social environments, which lie outside the scope of schools to address and which reaffirms the importance of early, sustained, and holistic data-gathering to inform the right interventions. However, a pervasive lack of integration between different datasets often makes this difficult. The early years are a particularly glaring example of this sort of data fragmentation. While all young children are subject to a universal 30-month developmental assessment, this data cannot then be accessed by the school system, making it difficult for settings to anticipate the relative maturity and individualised needs of incoming cohorts.

22. Overall, we believe there is an **insufficient amount of meaningful educational data being gathered in Scotland**. The RSE has previously remarked on the paucity of national attainment data (with an **overemphasis on literacy and numeracy markers**) and Scotland's lack of participation in international comparator surveys except for the Programme for International Student Assessment (PISA). Similarly, there is a **perceived shortage of consistent and accurate attainment data throughout the Broad General Education (BGE) phase** as there are no categorical national standards that can be used for comparison purposes (in contrast to the rigorous standards that exist for SQA qualifications). That **data which is gathered is often strongly tied to specific initiatives** (e.g. Pupil Equity Funding), which often have onerous reporting requirements and can distract from other forms of self-evaluation at the school and regional level.

23. Data collection creates administrative burdens on schools and teachers and so we **must be clear on the need for said data to be gathered in the first place**, how it links to system monitoring and improvement, whether there are ways to streamline the process, and whether the data can be trusted (for example, can we be certain that the data is being gathered in the appropriate manner and with the right consistency to be credible).

24. We are sceptical about the extent to which **Insight** data (the online benchmarking tool designed to help bring about improvements for learners in the senior phase (S4 to S6)) is being collected in practice and then meaningfully applied.

⁷ The recommendation states: 'The Scottish Government should initiate a national discussion on establishing a compelling and consensual vision for the future of Scottish education that takes account of the points made in this report, in particular the importance of placing the learner at the centre of all decisions.'

<https://www.gov.scot/publications/putting-learners-centre-towards-future-vision-scottish-education/>.

⁸ Royal Society of Edinburgh. (undated). *Being and Belonging* – early years conference. <https://rse.org.uk/whats-on/event/being-and-belonging-early-years-conference/>.

25. The link between policy interventions and their outcomes can often be tenuous, which makes measuring impact difficult. **Improving the reliability and validity of impact metrics should be a priority** to ensure the best distribution of resources at a time of increasing pressures on public funding.

26. As mentioned, we would strongly advocate for the need for **longitudinal studies**, consolidating a recurring theme of the Royal Society of Edinburgh's recent *Being and Belonging*⁸ early years conference which explored the long-term implications of early years experiences across a variety of factors such as health, wellbeing, educational and career achievement, etc.

27. We would also urge appropriate reflection on the **potential disincentives associated with gathering data**, which could manifest as schools prioritising certain performance metrics at the expense of other improvement actions.

28. **Teachers also need better training and confidence in conducting valid assessments** based on their professional observations (as was made more apparent by the Covid-19 pandemic).

Q10: How can we make better use of data to help reduce variation in outcomes achieved by young people in different parts of the country?

29. We are **uncertain if the Scottish Index of Multiple Deprivation (SIMD) is the best measure of deprivation** as it can obscure individual, family, or micro-level differences, such as pockets of deprivation in otherwise affluent neighbourhoods. Research has revealed that **various markers of deprivation** – including parental job classification, housing status, free school meal entitlement, etc. – **have unique associations with school absenteeism and achievement**, underscoring the importance of having more multifaceted tools to inform the allocation of resources and support for disadvantaged students.^{9,10}

30. The wording of the question is also potentially misleading. **Variation is not inherently negative in and of itself; rather, it is variation that manifests as inequality** which should be targeted. Other forms of variation (e.g. the promotion of certain alternative pathways in reflection of specific regional contexts) should be respected and indeed promoted as long as they do not perpetuate inequality.

⁹ Klein, M., Sosu, E. & Dare, S. (2020). Mapping inequalities in school attendance: the relationship between dimensions of socioeconomic status and forms of school absence. *Children and Youth Services Review*, 118. <https://doi.org/10.1016/j.chilyouth.2020.105432>.

¹⁰ Sosu, E. & Schmidt, P. (2022). Changes in cognitive outcomes in early childhood: the role of family income and volatility. *Frontiers in Psychology*, 13, Article 758082. <https://doi.org/10.3389/fpsyg.2022.758082>.



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