

Comments on *Scottish Government response to the Education and Skills Committee SNSA inquiry report*

(Lindsay Paterson, Edinburgh University, 14 June 2019)

These comments deal only with the government response relating to the Scottish Survey of Literacy and Numeracy (SSLN).

The government's response rejects any need for a new survey. The reasons to be doubtful of this response may be summarised under two main headings – design features of the SSLN that could be changed and features of the SNSA that prevent it from providing the kind of valid information that the SSLN could provide. The conclusion is that the government has not shown that the SNSA is an adequate substitute for a new survey.

1. Design of the SSLN

The government's response has assumed that the design of the SSLN could not change. Yet all of the criticisms which the response makes of the SSLN could be dealt with by improving its design. The main points are:

Sample size

The government's response notes that the SSLN had around 4,000 pupils per stage, whereas the SNSA records information on around 50,000. For a well-designed survey, with a sample selected randomly, there is no particular virtue in large numbers for their own sake. What matters is whether the sample is large enough to answer reliably the questions that it sets out to investigate. For example, the SSLN in 2016 gave confidence intervals of about $\pm 3\%$ for the proportion of Primary 7 pupils who had reached specified levels of attainment in writing.¹ That degree of precision was enough to establish reliably that attainment had declined between 2012 and 2016 for pupils from all categories of deprivation.

The government's response notes that the SSLN did not include Primary 1, whereas the SNSA does include P1. This could readily be changed, and there is expertise in how to survey P1 children sensitively in the work of the Growing Up in Scotland survey.²

The government's response notes the value of having longitudinal data on each pupil. This is indeed valuable and would be costly to implement routinely in a survey. Nevertheless, a combination of regular cross-section surveys such as the SSLN with longitudinal surveys such as Growing Up in Scotland can answer many of the questions that might be asked. For example, if we compared P7 in 2019 with P4 in 2016, then we would be comparing essentially the same group of children as they get older (and allowance can readily be made for migration to improve this comparison). That would tell us about any change for the age group as a whole, which is what matters for policy. For example, we might then see whether inequality in P7 in 2019

¹ These confidence intervals are the range within which we are 95% certain that the true percentage lies. Table 4.3b in *Scottish Survey of Literacy and Numeracy 2016 (Literacy): Supplementary Tables*. at <https://www.gov.scot/publications/scottish-survey-literacy-numeracy-2016-literacy/>.

² See <https://growingupinScotland.org.uk/about-gus/study-design-and-methodology/>

was less or more than inequality among these same pupils when they were in P4 in 2016. Understanding how that change has come about does require a longitudinal survey of individual pupils, as in Growing Up in Scotland, but that kind of information is usually not needed so frequently. For example, if inequality declined between 2016 and 2019, and we knew that, say, children's diets had improved disproportionately in deprived groups, then we could investigate by means of Growing Up in Scotland whether diet was linked to educational progress. But we would not need that level of detail to say that improving diets was probably one explanation of the change of inequality observed by the SSLN between P4 in 2016 and P7 in 2019.

Design of questionnaire

The government's response notes in several places that the SNSA is more closely linked to the details of the curriculum than was the SSLN. But the choice could be made quite differently. It would be perfectly possible to design the assessments in the SSLN to match the curriculum as closely as does the SNSA.

The government's response defends not reporting on independent schools on the grounds that the home postcode is not collected for pupils there. There is no reason why this could not change. The more fundamental point is that the independent schools were included in the SSLN but are not included in the SNSA. (See also below.) In any case, using only home postcode to define levels of deprivation is flawed.³ Ideally, data would be collected on a range of indicators of social circumstances (as in Growing Up in Scotland), but, if that is too expensive to obtain, then a combination of information about entitlement to free school meals and information about the parents' own levels of education would give a more valid measure of social circumstances than neighbourhood deprivation on its own. The way to gather that in the SSLN would be a simple questionnaire to parents.

Cost

The government's response reports that the cost of one round of the SSLN (covering a total of about 11,000 pupils) was £1.5m. There appears to be some double counting in this alongside the rest of the government's response, insofar as there are implicitly two charges against teacher workload – one of £455k for 'compliance costs' in schools (presumably mainly the release of staff time), and the other uncoded under the general heading of teacher workload. If £455k is paid to cover staff time, then we might wonder why there is any implication for teacher workload; but greater clarity on what is meant by 'compliance costs', and whether they represent an actual transfer of money to schools, would be useful here. It is estimated by the government in response to the committee's report that the annual cost of the SNSA is about £3m annually. For comparison, the annual cost of the Scottish Household Survey (which interviews about 11,000 people) is £2m.⁴ However we interpret the question of teacher time, the SSLN therefore does not seem unusually expensive. Of course, whether that cost is worth

³ See the following submission to the Scottish Government's consultation 'National Improvement Framework: Consultation on measuring the attainment gap and milestones towards closing it', autumn 2017: [https://www.research.ed.ac.uk/portal/en/activities/submission-to-national-improvement-framework-consultation-on-measuring-the-attainment-gap-and-milestones-towards-closing-it\(8044df35-11ae-46dd-b0bd-b905d66ad3f3\).html](https://www.research.ed.ac.uk/portal/en/activities/submission-to-national-improvement-framework-consultation-on-measuring-the-attainment-gap-and-milestones-towards-closing-it(8044df35-11ae-46dd-b0bd-b905d66ad3f3).html)

⁴ <https://www2.gov.scot/Topics/Statistics/16002/SurveyOverview/>

paying depends on whether it is accepted that the SNSA cannot on its own inform policy, which is the main point dealt with in 2 below.

2. Added value of a survey compared to the SNSA

Attainment

The government's response assumes that the SNSA data may be aggregated to give valid statements about, for example, inequality. Yet it was conclusively established by the Education and Skills Committee's report that this aggregation is suspect because of variation in the conditions under which the assessments take place. This is especially a problem at the youngest ages. Combined with that is the well-documented problems with relying on teachers' judgements of pupils' attainment, even when informed by the SNSA results. As pointed out by several witnesses to the Education and Skills Committee's inquiry, teachers at all levels – university as much as school – are unavoidably biased in their assessments of their own students. That's why we have anonymous marking, whether via the SQA or at university or college. The annual ACEL report is therefore not a valid account of attainment and cannot be used to reach valid judgements on the effects of educational policies.

Reporting

The government's response notes that the SNSA provides reports within 6 months whereas the SSLN took 11 months. In fact, the 6-month period refers only to pupils assessed in May. If a pupil was assessed in November, the delay would be about a year. But the main point here is to distinguish between different purposes. One strength of the SNSA technology is actually that it gives feedback to the pupil and teacher almost immediately, a strength that has nothing to do with annual reporting. Annual reporting is for the purposes of evaluating policy. Because policy cycles are slow, and because almost no aspect of educational policy would have any measurable impact in less than a year, there is no particular advantage in having reports after 6 months rather than after a year.

The government's responses (and indeed several members of the Education and Skills Committee) noted that the SSLN did not produce reports for each school or local authority. Providing a survey report for each school would be almost impossible without risking the anonymity of responses. It is more appropriate for schools to manage their own ways of understanding their pupils and their communities, free of intrusion by external agencies. For local authorities, a revised SSLN could seek to emulate the practice of the Scottish Household Survey, which does provide reports on each local authority, sometimes by combining adjacent years of data in order to increase the sample size and hence the reliability.⁵

The government's response notes that the SSLN did not report on independent schools, but how the information was reported was never the point at issue since that could always change. The point was simply that the survey did include independent schools, and so some understanding of their contribution to policy goals was always possible. In fact, independent schools were included in the 2012 report of inequality, based on the assumption that all their pupils lived in the least deprived areas (an

⁵ See for example the interactive tables at:
<https://www2.gov.scot/Topics/Statistics/16002/LATables2017/2017Excel>

assumption that is not in fact verifiable, and is unlikely to be correct⁶). That assumption does allow us to estimate the maximum amount by which the absence of independent schools underestimates the attainment gap. For example, in the published report on the 2012 SSLN, which included independent schools, the proportion of P7 pupils in the least deprived category who performed well (or better) in writing was given as 82%.⁷ In the revised figures, excluding independent schools, the figure was 79%.⁸ The proportion for the most deprived category was 61% in each source. So the omission of the independent schools underestimates the attainment gap by 3 percentage points (or 18 percentage points instead of 21). The SNSA, which omits independent schools, is almost certainly therefore underestimating the attainment gap.

Unique value of a survey

The government's response does not address the capacity of a survey to offer explanations of pupils' attainment in a way that the SNSA data cannot. As was pointed out in submissions to the Education and Skills Committee's inquiry, the SSLN (and its predecessor, the Scottish Survey of Achievement) could be used to investigate how teaching practices or pupils' attitudes to learning were related to attainment. These are instances of research being used to inform policy, and to investigate whether and how policy is having its effect. The SNSA data do not allow that kind of analysis to be done. No evidence is collected about the educational practices of pupils or teachers that could be linked statistically to pupils' attainment, and so nothing can be inferred about the most effective ways of teaching and learning. Of course, that is completely understandable for the SNSA as it has now evolved into a diagnostic tool for teachers. But this leaves a gap in the capacity of Scottish education to understand itself. By analogy, consider the value of the government-funded Scottish Health Survey in explaining patterns of health and ill-health across the population.⁹ No-one doubts the importance of this kind of health analysis; it can be done only because of the survey, and could never be possible if we had only the diagnostic decisions of doctors and nurses on individual people.

⁶ See source in note 3 above.

⁷ Chart 3.3 (p. 16) in Scottish Government (2013), *Scottish Survey of Literacy and Numeracy 2012 (Literacy): Report*, <https://www.webarchive.org.uk/wayback/archive/20170702004445/http://www.gov.scot/Publications/2013/04/8843/downloads>.

⁸ Table 2.3b in Scottish Government (2013), *Scottish Survey of Literacy and Numeracy 2012 (Literacy): Supplementary Tables*, <https://www.webarchive.org.uk/wayback/archive/20170702004445/http://www.gov.scot/Publications/2013/04/8843/downloads>.

⁹ For example, <https://www.gov.scot/publications/scottish-health-survey-2017-volume-1-main-report/>.