

## **EDUCATION AND SKILLS COMMITTEE**

### **Call for views: Scottish National Standardised Assessments**

#### **ACER UK**

#### **Assessments to improve learning**

This submission from the Australian Council for Educational Research International United Kingdom (ACER UK) addresses the focus: “What information the Government’s assessments can provide that contributes to improving the educational outcomes of children and young people.” A representative of ACER UK would be happy to give evidence to the Committee in person.

ACER UK, a wholly owned subsidiary of ACER group, which is a not-for-profit organisation established in 1930, was contracted by the Scottish Government in October 2016 to implement and deliver the Scottish National Standardised Assessments (SNSA) at four stages across all publicly funded schools in Scotland.

#### **THE PURPOSE OF A NATIONAL POPULATION ASSESSMENT FOR SCOTLAND**

Curriculum for Excellence (CfE) is a wide-ranging and comprehensive articulation of an approach to teaching and learning that embodies many of the features of education that have been identified as world class, among them a conception of assessment as integrated with the curriculum, and an emphasis on formative assessment. SNSA are designed to reflect these key elements of CfE, in order to assist teachers, schools and the wider education community in identifying learners’ strengths and weaknesses, in turn to inform learning and teaching. At ACER, assessment is core to our mission of improving learning. In the words of Geoff Masters, ACER’s Chief Executive and a world leader in educational measurement, ‘The fundamental purpose of assessment is to establish where learners are in their learning at the time of the assessment’<sup>1</sup> – and from there to make informed judgements about next steps in learning. In many aspects of its design and implementation, SNSA serve as a model of what large-scale assessment should be, and can be.

Before the implementation of SNSA, teacher judgement of learners’ performance, augmented with more or less frequent use of commercially available standardised assessments used at the discretion of a school or local authority, was virtually the sole method of individual learner assessment in Scotland. Whatever their particular merits, these commercial assessments did not provide a consistent national picture on which to base evaluative judgements at all levels of the system. The only national measure of primary to middle-secondary educational progress was the light sampling conducted by the Scottish Qualifications Authority (SQA) through the Scottish Survey of Literacy and Numeracy (SSLN), for two year groups. The Scottish Government’s decision to introduce SNSA combined the valuable features of supporting teacher judgements, providing consistent national assessment data, and giving individual-level reports of children and young people’s progress in literacy and numeracy.

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<sup>1</sup> Masters, Geoff. *Reforming Educational Assessment*, Australian Education Review no. 57. See also Masters, Geoff. (2018) *A Commitment to Growth*. Camberwell, Victoria: Australian Council for Educational Research.

## FLEXIBILITY AS A DESIGN FEATURE OF THE SNSA

In the approach taken to designing SNSA, a number of features promote a degree of flexibility that is rare if not unique among national assessments.

First, the assessments are available continuously throughout the school year, so that teachers can exercise judgement about when is the most appropriate time to administer them to their learners.

Second, the assessments are delivered online. Children and young people present for the assessments using a digital device: a desktop computer, laptop or tablet. The assessments are delivered online, and because all items (questions) are automatically scored, teachers can access their learners' reports as soon as an assessment is completed.

The third feature is made possible by online delivery: the assessments are adaptive – that is, the level of difficulty of questions is adjusted as learners move through the assessment, according to their responses. The adaptive methodology is a means by which an assessment can be rendered fairer by ensuring that learners are administered questions at a level of difficulty that adjusts to their current capacity. Moreover, a well-targeted assessment enhances motivation, which in turn helps to ensure that learners demonstrate accurately how much they know and can do. The assessment administered to each child or young person is neither so easy as to result in boredom, nor so difficult that it promotes frustration.

Fourth, the assessments do not 'time-out', either at the question level or at the whole tool level. Within the constraints of classroom management, learners may take as long as they need to answer the questions as well as they can; and if they need to leave the assessment before they have finished, they can come back and pick it up at the point where they left off.

And finally, SNSA include a range of accessibility affordances that allow learners with Additional Support Needs to access them with optimal independence. Accessibility experts empanelled by the Scottish Government have reviewed and provided guidance on this front since the inception of the programme.

All of these features are designed to ensure that SNSAs are fair and accessible to almost all learners. An additional way of promoting fairness and accessibility is the policy decision that, after appropriate consultation, a teacher may choose to administer an 'off-stage' assessment to a child or young person: for example, a very advanced P4 child may be administered a P7 assessment, or an S3 young person who is struggling may be administered a P4 assessment.

## CONTENT FOR SCOTLAND

For the first year of implementation, the academic year 2017-18, the assessments were built using existing questions from ACER's international item pool, which had been psychometrically validated with large samples of learners. All questions from this pool proposed for SNSA were reviewed and critiqued by panels of experts from Education Scotland and the Scottish Government, to ensure their cultural and linguistic appropriateness for Scotland, and were adapted (or rejected) where necessary. Every question selected for SNSA was also reviewed by the panels for its alignment with the CfE,

and matched to a statement in the then-current Benchmarks documents.<sup>2</sup> For the 2018-19 academic year, the sets of questions were replenished by one-third with new tasks developed specifically for the Scottish context. Again, these were vetted by panels of Scottish educational experts, as well as trial-tested with Scottish children and young people to ensure their statistical validity.

## SCIENTIFIC METHODOLOGY UNDERPINNING THE SNSA

The philosophy of measuring children's and young people's progress to improve learning is embodied in the Item Response Theory (IRT) psychometric methodology used across ACER's assessment programmes, and in the principles underlying its reports on learner's achievement.<sup>3</sup> IRT calibrates learner's achievement and item difficulty in each subject area on a single long scale, allowing the location of capacity in relation to the specific skills, knowledge and understanding encapsulated in the assessment questions. The questions in each subject are calibrated on a single continuous scale across stages. This means that capacity in reading, writing or numeracy can be reported on metrics that retain their meaning across year groups and over time, making progression easy to interpret. Quantitative information provided in the various SNSA reports uses these long scales across the stages of schooling, from P1 to S3 for reading and numeracy, and from P4 to S3 for writing.

In order to provide a Scottish frame of reference for reporting, two norming studies were conducted in the 2017-2018 academic year to provide standardisation by stage and subject area: one providing a national reference point for learner's capacity in the first half of the school year, and one in the second half. The sampling design selected by Scottish Government and implemented in these studies embodied an international 'gold standard' for collecting a scientific sample to represent the Scottish school population at P1, P4, P7 and S3. ACER recommends that similar norming studies be conducted at regular intervals in the future, to track national progress in literacy and numeracy over time.

The SNSA long scales and the normative reference points were introduced into the user reports from August 2018.

## DIAGNOSTIC FEEDBACK

In addition to the quantitative elements of reporting on SNSA, teachers receive detailed information about the content of the assessments: a general description of the kinds of skills, knowledge and understanding demonstrated by the learner on the assessment, and also a description of the area assessed by each question administered to each learner, and the learners' success or otherwise on those questions. These qualitative elements of the reports allow formative analysis of learners' strengths and weaknesses in the subject area. The reporting reflects the organisers identified in the CfE benchmarks, to link directly to Scottish curriculum descriptions.

The data that assessments generate have no purpose until and unless they are used and acted upon. For that reason, detailed information about individual learners' attainment, and

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<sup>2</sup> *Benchmarks: Literacy and English* and *Benchmarks: Numeracy and Mathematics* (Drafts, August 2016). For the academic year 2018 to 2019, the final version of the *Benchmarks* (published in June 2017) is used as the reference point for the assessments.

<sup>3</sup> Adams, R. J., Wu, M. L., & Wilson, M. R. (2015). *ACER ConQuest: Generalised Item Response Modelling Software* [Computer software]. Version 4. Camberwell, Victoria: Australian Council for Educational Research

the use of data by teachers to identify how best to develop their learners' understanding and skills, are essential to a valid system of reporting in a population assessment. This is absolutely consistent with the aspirations of Curriculum for Excellence in its quest to develop the very best curriculum, learning and teaching methodologies.

## A RANGE OF USER REPORTS

The suite of online reports generated from SNSA covers a range of uses at the school level. **Individual reports**, available immediately upon a learner's completion of an assessment, indicate the learner's level of attainment on the SNSA long scale and their performance in that subject in relation to Scottish norms. **Group diagnostic reports** show, as well as aggregate scores, how learners have performed on individual questions, and describe what each question is designed to assess. This diagnostic information can be interpreted and used by teachers to guide next steps in learning and teaching at both class and individual level, and to indicate – alongside their own judgements of learner's strengths and weaknesses – where interventions might be required. **Group aggregate reports** present aggregated results for subgroups of learners, such as classes within a year group, gender groups or learners with English as an Additional Language (EAL).

A suite of online and offline **reports for local authorities** is also provided as part of the SNSA programme.

## ENGAGEMENT AND PROFESSIONAL DEVELOPMENT

Providing user-friendly, detailed and comprehensive reports is necessary but not sufficient for a successful assessment programme. It is vital that the data are not an end in themselves but that the teaching community uses the information from the assessments as a means of directing learning to achieve articulated experiences and outcomes. A fundamental part of the SNSA roll-out is a programme of information forums, workshops, meetings, online and face-to-face training for teachers and school leaders, all aimed at supporting teachers and school leaders to turn data into information to enhance learning and teaching. Alongside the Scottish Government, ACER and its two Scottish-based partners, SCHOLAR and Twig, have worked closely with stakeholders in education at all levels to ensure that the programmes are appropriate for and meet the aspirations of Scottish education.

Scottish Government specified in its invitation to tender for SNSA that a comprehensive programme of engagement and professional development should accompany the implementation of its national assessment programme. This is an unusual and thoroughly admirable dimension of SNSA, which will be of great interest internationally.

## IMPROVEMENT FOR ALL

The SNSA methodology of reporting on long scales, aligned to a core belief that learning improvement can and should occur for all children and young people, regardless of their starting point, is fundamentally consistent with the principles of Curriculum for Excellence and the National Improvement Framework for Scottish Schools. ACER's long scales allow for reporting of growth over time on a single, continuous metric – a metric that retains its meaning from P1 to S3 (and beyond), so that comparison of achievement across year groups is transparent and easily interpretable, and progress can be tracked at individual and group level over time.