**Independent Review**

**of the**

**Scottish National Standardised**

**Assessments for Primary 1**

Evidence presented by

Upstart Scotland

**Point 1: ‘The compatibility of the assessments with the play-based approach to early levels of Curriculum for Excellence (CfE)’**

**Section A: What exactly is meant by a ‘play-based approach’?**

We are assuming that the term ‘play-based approach’ is a short-hand description for pedagogical practice appropriate during early childhood. This critical period of children’s development is described by the United Nations thus:

*Early childhood,* ***defined as the period from birth to age eight****, is a time of remarkable growth with brain development at its peak. Early childhood care and education (ECCE) is more than a preparation for primary school. It aims at the holistic development of a child’s social, emotional, cognitive and physical needs in order to build a solid and broad foundation for lifelong learning and well-being.*

 [UNESCO 2017, based on [UNCRC General Comment 7](https://www2.ohchr.org/english/bodies/crc/docs/AdvanceVersions/GeneralComment7Rev1.pdf)]

The ‘Early Level’ of *Curriculum for Excellence* is based on a high-quality ECCE approach between the age of three and six years (i.e. straddling children’s time in nursery and Primary 1). This was an attempt to bring Scotland into line with early years practice in most countries of the world (including all mainland European countries), where children do not begin primary education until they are six or seven.

In this paper, we shall therefore refer to high-quality ECCE, rather than ‘play-based approach’. We have heard the latter used to describe a wide range of pedagogical practices, many of which are not consistent with international descriptions of principled ECCE. Confusion about the type of pedagogical practice appropriate in P1 have muddied the water throughout the ‘Play Not Tests’ debate.

We propose defining ‘high-quality ECCE’ as based on principles developed from the work of Frederick Froebel. Scotland has a long tradition of Froebelian ECCE in the preschool sector and there is currently a resurgence of interest around the country in this pedagogical tradition.

The underpinning principles are:

* ***the integrity of childhood in its own right***
* ***the relationship of every child to family, community and to nature, culture and society***
* ***the uniqueness of every child's capacity and potential***
* ***the holistic nature of the development of every child***
* ***the role of play and creativity as central integrating elements in development and learning***
* *the right of children to protection from harm or abuse and to the promotion of their overall well-being.*

 [[Froebel Trust, 2012](https://www.froebel.org.uk/froebelian-principles/)]

These principles are consistent with those of other well-established systems of ECCE, e.g. Montessori, Reggio Emilia, Finnish Day Care).

The concept of ‘holistic development’ – i.e. recognition that, at this stage in children’s lives, physical, social, emotional and cognitive development are intricately intertwined – is central to high-quality ECCE.

Unfortunately – due to Scotland’s extremely early school starting age – our country’s historical commitment to Froebelian pedagogical principles has extended only until children are four or five (roughly halfway through what the UN defines as ‘early childhood’).

When the *Curriculum for Excellence* was introduced, there was no national in-service training for primary teachers to support the implementation of the Early Level in P1. Moreover, during the last thirty years, Scottish pre-service courses for primary teachers have paid little attention to the specific developmental needs of the under-eights. Knowledge about child development and principled ECCE at classroom level is therefore generally limited to:

* pre-school early years practitioners who have studied for Early Childhood Practice qualifications
* older GTC-registered Froebel-trained teachers (most of whom are now reaching retirement age) and primary school staff who have been informally ‘trained up’ by them
* P1 teachers who have, over the last few years, attended Froebel courses and other ECCE training aimed at P1/2, which have been provided at the Universities of Edinburgh and Strathclyde.

As a result, high-quality ECCE (according to the Froebelian principles outlined above) has not been introduced in most Primary 1 classes. Hence the confusion around the term ‘play-based learning’, as this comment from a Scottish parent indicates:

‘*We've a long long way to go. My child's P1 class is 'piloting a play-based approach'. [I went to] parents’ night last night, to view pages and pages and pages of dull-as-ditchwater boring repetitive worksheets. Was told that my child can't even recognise most of their letters and that they're lacking in confidence and nowhere near "where they should be by now with their literacy"... Motivation and meaning is clearly missing from what they are being asked to do. So much for a play-based approach! Feeling furious and also pretty powerless*.’

As her description of practice suggests, the confusion about developmentally-appropriate practice is exacerbated by Scotland’s cultural attachment to very early instruction in literacy and numeracy skills – another result of our early school starting age. The overwhelming majority of Scots has been brought up to assume that children should begin learning to read and write at the age of four or five, an age at which children in mainland European countries would not yet have started school.

A developmentally-appropriate ECCE ethos is very different from cultural expectations of

‘school’.

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| **ECCE ethos** | **School ethos** |
| Adults expected to support children attheir individual developmental levels –physical, emotional, social andcognitive. | Adults expected to teach children according to age-related standards. |
| Emphasis on all-round development. | Emphasis on literacy and numeracy. |
| Outdoors (and in nature) as often as possible.  | Mainly indoors, often desk-based. |
| Informal, flexible, context-based ‘curriculum’. | Usually a time-tabled, subject-basedcurriculum.  |
| Children who are interested in readingand writing encouraged/supported at their own developmental level.  | Children expected to attain specific targets in literacy (benchmarks inScotland). |
| Interest in maths and number developed through context-based experiences. | Children expected to attain specifictargets in maths/numeracy(‘benchmarks’ in Scotland). |
| Balance of self-directed play and adult-initiated activities. | Activities mainly adult-initiated (often adult-directed), with little opportunityfor self-directed play. |

There now is evidence that the traditional ECCE emphasis on play-based learning (including self-directed play) and support for children’s individual development (as opposed to ‘teaching’) has a sound neuroscientific basis, in that it facilitates the development of ‘biologically primary knowledge’. This is:

*‘knowledge that we have evolved to acquire over countless generations. That category of knowledge tends to be critically important to humans providing, as examples, knowledge that allows us to listen and speak, recognise faces, engage in basic social functions, solve unfamiliar problems, transfer previously acquired knowledge to novel situations, make plans for future events that may or may not happen, or regulate our thought processes to correspond with our current environment.* ***Humans must learn to engage in these very complex cognitive processes but because of their importance, we have evolved to acquire the necessary skills effortlessly and automatically. Consequently, they cannot be taught to most people’***

[[Sweller, Merrienboer and Paas, ‘Cognitive Architecture and Instructional Design’,](https://link.springer.com/content/pdf/10.1007/s10648-019-09465-5.pdf) *[Educational Psychology Review,](https://link.springer.com/content/pdf/10.1007/s10648-019-09465-5.pdf)* [2019](https://link.springer.com/content/pdf/10.1007/s10648-019-09465-5.pdf)]

The capacities described above as ‘biologically primary knowledge’ are widely acknowledged (e.g. by the Harvard Centre for the Developing Child) as underpinning self-regulation and emotional resilience, both of which are essential for lifelong well-being and mental health, not to mention success within the educational system. Evolutionary biologists explain that human children are naturally equipped to develop these capacities during the first seven or eight years of life through sensitive adult care (including, of course, behavioural example) and active, social play with peers – as often as possible, outdoors.

However, due to rapid socio-cultural changes over recent decades, many children in urban, consumerist cultures are no longer cared for in a traditional family environment for much of their waking life and (for ‘health and safety’ reasons) are increasingly denied access to active, social outdoor play.

**Section B: Why the SNSA literacy/numeracy assessments are incompatible with developmentally-appropriate ECCE (a ‘play-based approach’).**

As explained above, the concept of ‘holistic development’ – i.e. recognition that physical,

social, emotional and cognitive development are intricately intertwined – is central to

high-quality ECCE. By moving towards a ‘school ethos’ in Primary 1, we are expecting

many children to acquire specific literacy/numeracy skills before they are developmentally

‘ready’ to do so. The types of daily experience which prepare the under-sevens for

literacy skills are listed in Appendix 1.

There is, in fact, no research suggesting that beginning formal teaching of literacy skills before age six/seven is beneficial and a growing body of research showing that early ‘top-down teaching’ of specific academic skills can be seriously counter-productive in the long term (see Appendix 2).

1. **Salience**

When certain aspects of the curriculum are singled out for assessment they assume particular importance in the eyes of the adults concerned – in the case of the P1 SNSA this includes the parents of P1 children, the teachers & senior management in primary schools, and educational managers in local authorities. Since ‘testing’ is an educational topic that is of interest to the media, the SNSAs are also of interest to media commentators and, through them, the general public.

1. **‘Assessment’ and ‘testing’**

All educators inevitably engage in informal assessment of children’s abilities and progress on a day-to-day basis. Generally this is just a matter of ongoing observation but teachers also use various assessment tools to help direct their own attention. Currently, the favoured assessment tool of many early years educators is the Leuven Scale of Levels of Involvement, which measures the extent to which a child is ‘engaged’, ‘focused’, ‘thinking’ – thus indicating children’s learning dispositions, their intrinsic motivation to pursue various tasks and their level of attention and self-regulation when so engaged.

This type of observational assessment is very different from the SNSA:

* the SNSA is a one-off tablet-based task, presented to the child (rather than chosen by the child) and related to competence in specific skills of literacy and numeracy
* the SNSA is standardised and linked to [published benchmarks](https://education.gov.scot/improvement/Documents/LiteracyEnglishBenchmarks.pdf) for achievement in literacy and numeracy, many of which are not mentioned in the Experiences and Outcomes for *CfE’s* Early Level because many P1 children will still be working towards them
* these benchmarks emanate from Education Scotland and are therefore assumed to be the desirable outcomes for children by the end of Early Level which is generally associated with the end of P1.
1. **P1 benchmarks**

While we have no quarrel with the benchmarks for later *CfE* levels, Upstart Scotland maintains that the benchmarks for Early Level literacy do not reflect the developmental principles of ECCE upon which Early Level is based.

* The original ‘Experiences and Outcomes’ are clearly based in a developmental approach, for instance: they use verbs such as ‘explore’, ‘play’, ‘choose’, ‘discover’ and ‘develop’; the emphasis is on communication rather than reading/writing; in the ‘writing’ section there is no specific reference to letter-formation.
* The benchmarks for Reading and Writing relate mainly to specific reading and writing skills, many of which are aspirational for the majority of five-year-olds, e.g.



 (*taken from* [*literacy benchmarks*](https://education.gov.scot/improvement/Documents/LiteracyEnglishBenchmarks.pdf))

* During the extrapolation of skills-based benchmarks from the Experiences and Outcomes, the developmental principles of *CfE* Early Level have been seriously distorted. Indeed, the first version of the benchmarks in 2016 bore more similarity to the desirable outcomes for England’s EYFS than *CfE* (the revised version in 2017 is slightly less aspirational).
* The English Foundation Stage requirements for literacy have always been highly contentious, leading to pedagogical debates such as the one currently surrounding Ofsted’s *Bold Beginnings* document. Upstart Scotland is deeply concerned that – as in England – these benchmarks (and the related assessments) will distort practice, resulting in a normalisation over time of developmentally inappropriate expectations for P1 literacy.
1. **High-stakes assessment**

In response to letters to the Scottish Government since the announcement of the P1 SNSA, Upstart Scotland has been repeatedly been assured that it is not ‘a high-stakes assessment’ (on the basis that it is not a pass/fail assessment and is intended to take place within the context of on-going classroom practice).

However, the SNSAs have from the beginning been a fundamental part of a very high-stakes policy – the attempt to close the poverty-related attainment gap. There is extensive evidence that, when systems of national assessment are employed as part of high-stakes policy-making – such as NAPLAN in Australia and the Key Stage 2 SATs in England – they have unintended consequences in terms of classroom practice, consistent with the well-known Campbell’s law:

*‘The more any quantitative social indicator is used for social decision-making, the more subject it will be to corruption pressures and the more apt it will be to distort and corrupt the social processes it is intended to monitor.’*

[[Campbell, 1979](https://www.sciencedirect.com/science/article/abs/pii/014971897990048X)]

Given the media interest in the SNSA assessment regime since its inception – especially in the P1 assessment – there can be no doubt that the P1 SNSA is high-stakes in the eyes of parents and teachers, however much the Scottish Government wishes it were not.

1. **Teaching to the test**

When standardised assessments (especially task-based ‘tests’ of pupils’ skills) are introduced, teachers feel obliged to prepare pupils to perform as well as possible – a well-known phenomenon known as ‘teaching to the test’.

We have heard it argued that, since the SNSAs are tablet-based and teachers do not know what tasks will be presented, they cannot ‘teach to the test’.

Given the points argued in 1 and 2 above, Upstart contends that the very **existence** of these national standardised assessments endorses Scotland’s cultural assumption that P1 children should be instructed in specific literacy and numeracy skills. Indeed, it intensifies the public perception that early attention to the three Rs is of critical importance.

In addition, the aspirational ‘benchmarks’ for pupils’ performance at the end of Early Level (see above) were devised to inform SNSA and introduced during the run up to the tests. So – even if teachers don’t know the specific tasks to be presented on the tablet-based SNSA – they are well aware of the types of skills presumed to be involved, most of which would involve considerable time and effort on the teacher’s behalf throughout P1 if a reasonable number of children are to achieve them by the end of Early Level.

Although benchmarks have also been introduced for other curricular areas – including Health and Well-being – Education Scotland’s advice to teachers on their use intensifies the ‘salience’ effect:

*‘There is no need to provide curriculum level judgements in all curriculum areas – stick to literacy and numeracy’.*

[[Education Scotland benchmarks advice](https://education.gov.scot/improvement/Documents/LiteracyEnglishBenchmarks.pdf), page 7]

Formal instruction in specific cognitive tasks is directly counter to the holistic principles of developmentally-appropriate ECCE as outlined in Section A.

1. **Ability grouping**

In Primary 1, where teachers are responsible for the care and education of 25 children (these days often without the help of Pupil Support Assistants), the range of pupils’ developmental ‘readiness’ for literacy and numeracy teaching is very wide. To ensure that every child has the best possible chance of performing well on the SNSAs, it is usually deemed necessary to group them by ‘ability’. The adverse outcomes of early ability grouping (especially in literacy) are well-documented:

* Young children are labelled as ‘low’, ‘medium’ or ‘high’ ability before their age-group has typically reached the stage of holistic development when age-related standards can reasonably be applied (see 8 below).
* No matter how teachers attempt to disguise the fact that grouping is based on ability, children – and parents – are generally quick to work out the system. Early labelling may therefore affect children’s own self-image (‘I’m in the Saturn group so I’m thick’).
* Due to developmental lag, children in the ‘bottom’ group generally struggle with skills and concepts which children in the ‘top’ group find relatively easy. The children who, at the age of five, lag behind their peers in terms of overall development typically tend to be:

 - from disadvantaged backgrounds

 - male

 - the youngest in the class.

These ‘bottom-group’ children are often therefore perceived by their teachers as having less potential than those who are placed in the ‘top group’.

* A year or so spent struggling with skills and concepts can affect children’s disposition to learn, and/or lead to anxiety about these particular skills/concepts. This inhibits further learning and can impact on future progress.

Ability grouping therefore creates self-fulfilling prophecies and establishes an ‘attainment gap’ which then becomes increasingly difficult to reduce. [See also the recent paper from NEU: [‘Grouping in Early Years and Key Stage 1: A Necessary Evil?’](https://neu.org.uk/sites/neu.org.uk/files/NEU279-Grouping-in-early-years-KS1.PDF)]

1. **Conflict between developmentally-informed practice and curriculum-driven practice**

The teacher-pupil relationship required to fulfil the Froebelian pedagogical principles listed in Section A above involves informed support for each child’s unique developmental needs. This is sometimes described as ‘bottom-up’ support, where the educator’s task is to identify the child’s developmental stage and provide a supportive environment and personal encouragement to move ‘onwards and upwards’.

There is obviously a serious mismatch between this type of ‘bottom-up support’ and the ‘top-down’ teaching required to ensure all P1 children do as well as possible when they take the SNSA. The former is developmentally-informed, related to children’s all-round development and non-judgemental on the part of the teacher. The latter (whether conscious or unconscious) is curriculum-driven, related to the acquisition of specific skills and motivated by the pursuit of age-related ‘standards’ of achievement.

Again, therefore, the requirement for children to complete the P1 SNSA is incompatible with developmentally-appropriate ECCE.

1. **Age-related standards**

Upstart Scotland is not arguing against the principle of age-related standardised assessment in general. Given that primary-school children are necessarily educated in groups (in Scotland, usually classes of 30+) which are organised according to chronological age, it is helpful for teachers to have some idea of the academic standard most children can be expected to achieve at a particular age. This is especially important in literacy and numeracy, the essential foundations on which almost all academic education is based.

However, as suggested by the UNESCO quote at the head of this paper, until the age of about eight, the development of specific cognitive skills is intricately intertwined with physical, emotional and social development. Judgements of literacy/numeracy skills by age-related standards are therefore not appropriate at P1.

Indeed, the benchmarks for achievement at the end of P1 (illustrated above) would be considered highly unrealistic in most countries of the world, where children of four and five are not even at school, let alone being assessed for their competence in reading, writing and maths.

In 66% of countries worldwide the school starting age is six and in 22% of countries it is seven ([World Bank data](https://data.worldbank.org/indicator/SE.PRM.AGES)). Children from developed nations that fall into the latter group tend to perform disproportionately well in the OECD PISA assessments of literacy, numeracy and science. Accordingly, Singapore (which currently tops the PISA charts) has this summer abandoned national standardised assessment of children under the age of eleven and the Chinese government has decreed that the under-sevens should not be tested in literacy/numeracy.

This refects increasing international recognition that early assessment of specific cognitive skills is not only incompatible with developmentally-appropriate ECCE, but can also be counter-productive in the long run.

On the basis of all the above points, Upstart Scotland contends that the P1 SNSA is incompatible with the developmentally-appropriate, play-based pedagogical approach recommended in the Early Level of *Curriculum for Excellence* Early Level and described in the [UNCRC General Comment 7 (2005)](https://www2.ohchr.org/english/bodies/crc/docs/AdvanceVersions/GeneralComment7Rev1.pdf)

We further contend that – in the long-term – the P1 SNSA will actually widen the poverty-related attainment gap. Since the SNSAs were introduced as part of a raft of measures intended to narrow (or even eradicate) the attainment gap, this seems to us an important issue and we are surprised and disappointed that it isn’t addressed under the terms of the review. We have covered this briefly in (4) above and in our response to Point 3. If, however, the review body wishes to pursue the question, we should be happy to present further evidence.

**Further related issues**

Several other significant issues relating to the inappropriateness of the P1 SNSA are not covered within the terms of the independent review. They include:

* The scandalous lack of specialist pre-service and/or inservice training in Scotland for primary teachers who work with the under-sevens (e.g. in child development and play-based pedagogy).
* The mixed – and often questionable – messages from Education Scotland regarding appropriate practice in P1 (e.g. on the one hand, vague and sometimes misguided advice on ‘play-based practice’; on the other, the aspirational benchmarks for literacy illustrated above, which do not correlate with the pedagogical principles underpinning *CfE’*s Early Level).
* The extent to which national cultural assumptions have driven the debate about P1 assessment (e.g. the First Minister’s statement on 11/9/18 that ‘If a child in Primary 1 is needing just a little bit of extra help with their reading or their numbers, surely it’s better that that is known in Primary 1 rather than waiting until later on in the school when it might be harder to provide that extra help’ – see our evidence under Points 2 and 3 re diagnostic assessment) and the historical factors upon which these assumptions are based.
* The wider reasons behind Upstart’s campaign for a relationship-centred, play-based kindergarten stage for children aged 3 to 7 years, which are based on the significance of this developmental stage for all children’s long-term physical and mental health (as well as their educational success). Indeed, the campaign was started due to clearly emerging links between the decline of active, social, outdoor play in early childhood and the alarming growth of mental health problems among children and young people (see [Lancet article](http://www.thelancet.com/journals/lanchi/article/PIIS2352-4642%2817%2930092-5/fulltext), November 2017)

**Point 2: the usefulness of the diagnostic information provided to teachers and how it supports professional judgement**

The diagnostic information provided by the P1 SNSA would have to be extremely useful to cancel out the considerable adverse effects of ‘unintended consequences’ and ‘pernicious incentives’, described in our response to Point 1 above. If it is to support P1 teachers’ professional judgement in providing high-quality ECCE, it should also relate to children’s level of overall development.

Upstart Scotland therefore contends that – if Scotland is to provide the best possible educational support for four- and five-year-old children – the current P1 SNSA is **not** **useful**.

It is, in fact, dragging us in a pedagogical direction which is harmful for children’s long-term health/well-being and their (and Scotland’s) future economic success.

**Why diagnostic information from the P1 SNSA is not useful**

1. **in terms of children’s health and well-being**

In 2018, the American Academy of Pediatrics (AAP) published [*The Power of Play*](http://pediatrics.aappublications.org/content/142/3/e20182058)*,* pointing out the role of play in promoting a range of skills and capacities, including executive functioning skills, self-regulation and resilience. It states that:

*‘executive functioning skills are foundational for school readiness and academic success, mandating a frame shift with regard to early education… Kindergarten [the equivalent of P1 in Scotland] should provide children with an opportunity for playful collaboration and tinkering, a different approach from the model that promotes more exclusive didactic learning at the expense of playful learning. The emerging alternative model is to prevent toxic stress and build resilience by developing executive functioning skills. Ideally, we want to protect the brain to enable it to learn new skills, and we want to focus on learning those skills that will be used to buffer the brain from any future adversity.’*

The AAP’s concern is related to increasing mental health problems in children and young people, a problem which the UK shares, as illustrated by this recent [news item](https://inews.co.uk/news/children-suicidal-help-mental-health-problems/):

*‘In 2017/18, 33,270 children and teenagers were referred to CAMHS - the highest number to date and a 22% increase in four years. The BBC reported that demand for services is so high that, in some parts of the country, children have to be suicidal before they’re eligible for referral.’*

The Upstart Scotland campaign was set up in response to growing problems with both physical and mental health, and the need to nurture physical activity, self-regulation and resilience during children’s early years. We would be happy to provide further information on this subject.

1. **in terms of children’s (and Scotland’s) future economic success**

In recent years, the World Economic Forum (WEF) has also taken an interest in ECCE, due to their predictions about the skills needed by the future workforce, e.g. creativity, problem-solving, emotional intelligence. All of these are developed during early childhood through play.

Recent WEF publications have echoed the AAP’s concern about the shift from developmentally-appropriate ECCE towards more ‘didactic learning’.

‘Being a kindergartener today [the equivalent of P1 in Scotland] is very different from being a kindergartener 20 years ago. In fact it is more like first grade. [Researchers](http://doi.org/10.1177/2332858415616358) have demonstrated that five-year-olds are spending more time engaged in teacher-led academic learning activities than [play-based learning opportunities](http://www.allianceforchildhood.org/sites/allianceforchildhood.org/files/file/kindergarten_report.pdf) that facilitate child-initiated investigations and foster social development among peers.’ [[Brown, 2017, for WEF](https://www.weforum.org/agenda/2017/04/its-all-work-and-almost-no-play-in-kindergarten-but-does-it-matter?utm_content=bufferada08&utm_medium=social&utm_source=facebook.com&utm_campaign=buffer)]

Recent changes to the early years curriculum in China and Singapore (including the abandonment of standardised assessments for the under-sevens) have been influenced by the WEF’s arguments.

**Can the P1 SNSA support teacher’s professional judgement in ‘useful’ ways?**

We are not denying that, in some extreme cases, the P1 SNSA may provide illuminating information which does indeed support teachers’ professional judgement, e.g.this anecdotal example (from a primary head teacher in Glasgow):

*Among our 2017 intake was a little girl who was still in nappies when she arrived in P1. Her social and communication skills were very poor – as was her physical development – and she spent much of her time lying on the classroom floor. However, when presented with a tablet and asked to complete the P1 SNSA, she was delighted to comply and performed far more successfully than her teacher had imagined possible.*

The head teacher put this down to the child having been given a tablet as a pacifier at a very early age and spending most of her out-of-school life playing on it.After four or five years’ practice, the little girl is proficient at manipulating a tablet and has a strong emotional attachment to this particular ‘learning tool’. There’s an optional auditory accompaniment to the SNSA tests so she did not require any reading ability to complete the tasks presented to her.

However, this fascinating professional insight pales into insignificance when compared with the physical, social and emotional developmental issues that little girl’s teacher has to deal with, none of which will be ameliorated by skills-based practice of literacy skills.

The verdict of all the P1 teachers Upstart Scotland has heard from is that the SNSA did not tell them anything they did not already know (these reports concur with those collected by the EIS SNSA survey, in which none of the comments about the P1 SNSA were favourable).

In the light of all the arguments presented in this paper so far, we are concerned that P1 teachers who found the SNSA information ‘useful’ are among the many primary teachers who are have little knowledge of child development and the play-based pedagogical principles that can help prepare children for future success in literacy and numeracy.

The type of diagnostic assessment at P1 which would be most useful in informing teachers’ professional judgement would relate to child development in general. This is, in fact, the type of diagnostic assessment carried out in other European countries such as Germany.

**Point 3: the future of the assessments, in particular whether they continue in line with the current continuous improvement model, whether they should be substantially modified or whether they should be stopped.**

The SNSAs were originally introduced as part of a raft of measures (the National Improvement Framework) intended to reduce the attainment gap. There has been some confusion as to whether the prime purpose of the P1 SNSA is to:

1. provide ‘baseline data’ about the literacy/numeracy skills of Scottish P1

children upon which to judge the success of a ‘continuous improvement model’

1. provide diagnostic information about individual children to support their teachers’ professional judgement and inform pedagogical practice.

If (i), the British Educational Research Association’s recent paper, [*A Baseline Without Basis*](https://www.bera.ac.uk/researchers-resources/publications/a-baseline-without-basis), provides evidence that task-based national standardised assessment of this age-group is ‘ is likely to produce results with little predictive power and dubious validity.’

 If (ii), please see all our arguments in Points 1 and 2 about the ways in which specific assessment of literacy and numeracy skills directs P1 teachers’ attention away from developmentally-appropriate pedagogical practice for this age-group.

Upstart Scotland is hugely supportive of the aims of the National Improvement Framework. However, we believe that lack of understanding about early child development and high-quality ECCE (combined with cultural assumptions about starting literacy and numeracy instruction at P1) has led to the creation of an assessment tool that will **not** produce ‘continuous improvement’. Indeed, it is more likely, in the long run, to widen rather than reduce the attainment gap.

We therefore believe that **the current P1 SNSA should be stopped immediately** (and the Early Level benchmarks scrapped as being inconsistent with the developmental principles of that Level). We cannot imagine any ‘modification’ of a task-based assessment tool for literacy and numeracy skills that would be developmentally appropriate or pedagogically useful for this age group. In the words of Professor Dylan Wiliams, an international authority on formative assessment:

*‘The unreliability of the assessments, combined with the unreliability of five-year-olds, means these assessments are almost completely useless as guides to the achievement and needs of five-year-olds.’*

**Developmentally-appropriate assessment at P1**

This is not, however, to argue against assessment at P1, as long as it is developmentally-appropriate for the age group and directs teachers’ attention towards high-quality ECCE pedagogical practices.

In terms of the NIF’s aims, for instance, we know from the *Growing Up in Scotland* data that, when children are five years old, there is a gap between the ‘advantaged’ and ‘dis-advantaged’ of about 13 months in language development and 10 months in problem-solving. The most appropriate pedagogical practice would therefore direct attention towards language development and problem-solving within a ‘holistic’ curriculum, rather than specific literacy/numeracy skills which may be beyond the disadvantaged children’s current level of understanding.

Research by the Effective Provision of Pre-School Practice project has shown that developmentally-appropriate ECCE – with plenty of emphasis on play and ‘sustained shared thinking’— is the most effective way to support development in language and problem solving. There is also copious evidence that exposure to stories, nursery rhyme knowledge and activities that develop children’s ‘concepts about print’ provide strong foundations for the development of literacy skills (this is the research which informs Appendix 1).

Children from highly literate, economically advantaged families are, on the whole, more likely to have benefited from the ‘daily experiences’ described in Appendix 1 than those from disadvantaged backgrounds. The educational success of countries such as Finland suggests that three or four years of high-quality ECCE – providing opportunities for these ‘daily experiences’ for all children – is the best way to create a ‘level playing field’ for formal education. This should help to close the attainment gap as well as enhancing all children’s chances of lifelong health/well-being and future economic success.

Incidentally, ‘disadvantage’ is only one reason for early difficulties with the three Rs:

* Boys are more likely than girls to take longer developing the skills and capacities required for success in literacy.
* The youngest children in a class are, by definition, more likely to lag behind older children in terms of overall development.
* Children for whom English is an additional language are less likely than their peers to achieve average scores on tests of language/literacy development.

There is good reason to believe that these groups would also benefit from three to four years of high-quality ECCE – and that an appropriate form of assessment would be necessary to monitor their progress.

**Alternative models of assessment at the P1 stage**

Given the high media profile of the P1 SNSA over the last year – and the consequent anxiety among many parents about monitoring their children’s academic progress –we recognise that it would be reassuring for parents if an alternative model of assessment were provided. It would also be helpful for P1 teachers to have access to an assessment tool that supported them in making judgements about whether a child might have difficulties with formal literacy/numeracy learning when it begins.

A diagnostic tool that assesses children’s holistic development, whilst also providing reliable ‘baseline information’ related to the SNSA, could also be useful in assessing the efficacy of high-quality ECCE in narrowing the attainment gap. However, any diagnostic assessment of **individual** children’s development involves skilled professional knowledge and observation. Three examples of assessment methods for five-year-old children illustrate the difficulties of developing such a tool.

**Germany** has a well-established screening system for five-year-olds, involving personal medical and developmental check-ups by specialist professionals. Parents take their children to local health centres for these preschool screenings and the results are made available to them and to their children’s teachers. There appears to be widespread confidence in the system and it seems to us to be the most effective system currently in use. Unfortunately, reproducing it in Scotland would be prohibitively expensive at the present time.

Authorities in **the Netherlands** have recently attempted to solve the problem of expense by introducing a tablet-based pre-school screening programme, covering language development and aspects of numeracy, which is completed by five-year-old children, supported by their nursery teachers. However this programme is already generating anxiety among parents and has spawned a rash of commercial products aimed at improving children’s performance – i.e. because it is task-focused and completed by the child, it is seen as a ‘test’ and has resulted in the usual high-stakes, ‘teaching to test’, developmentally-inappropriate response to task-focused assessments.

In **Australia** there is a system of standardised assessment called NAPLAN (National Assessment Programme: Literacy and Numeracy) which begins in Grade 3 when children are between seven and eight years old. However, Australia also uses a national developmental screening programme – the Early Development Instrument (EDI) – the results of which have been found to correlate with children’s NAPLAN performance at Grades 3, 5 and 7. The EDI could therefore be useful in Scotland for making judgements about ‘continuous improvement’ and was, in fact, successfully trialled in East Lothian a few years ago. However, data from the EDI (extrapolated from responses by P1 teachers to a questionnaire) is not intended – or validated – for diagnostic use with individual children.

These three examples sum up the difficulty of providing useful diagnostic information about this age- group:

* any diagnostic screening process must be personal and individual
* at best, it involves informed observation by experts with professional qualifications in child development (physical and psychological)
* if collected via a task performed by the child, it inevitably results in the type of unintended consequences and ‘perverse incentives’ described in Point 1 of this paper.

**A way forward for Scotland**

If Scotland is to provide a holistic assessment of five-year-old children’s developmental maturity, we recommend that it should be performed in a validated, standardised way by P1 teachers (who have professional qualifications and typically know their pupils extremely well within several months of their entry into P1). However, given current levels of knowledge about developmentally-appropriate pedagogy among most P1 teachers, it would first be necessary to upgrade their professional knowledge in this respect.

We therefore recommend that the most productive way forward for Scotland is:

1. to provide pre- and in-service training courses for teachers working with children under the age of seven, thus creating a body of professionals who can be trusted by the public to identify developmental problems
2. develop a standardised assessment tool that informs teachers’ observations of children in terms of holistic development (including literacy/numeracy ‘readiness’).

In terms of 2, the Early Development Instrument may provide a useful starting point. It has already proved effective as a way of monitoring children’s progress in Australia. It has been successfully piloted in Scotland and its results should therefore correlate to our P3 and P7 SNSAs (not least because they were developed by ACER, which also developed NAPLAN).

The main drawback of the EDI is that it is not validated for use as a diagnostic assessment tool for individual children. It is possible that, with input from experts in child development and assessment instrument, this problem could be resolved.

However, even if it is not, the experience of completing the EDI for their classes would provide guidance to P1 teachers about developmental expectations in the areas covered:

* social competence
* physical health and well-being
* emotional maturity
* language and cognitive development
* communication skills and general knowledge.

Based on their assessments of individual children generated through completion of the EDI, teachers could, where necessary, refer children for further diagnostic assessments through appropriate channels, e.g. speech and language therapist, audiometrician, educational psychology services.

**APPENDIX 1:**

**A LITERACY-RICH ENVIRONMENT FOR ALL KINDERGARTEN CHILDREN**

**(within which individuals are supported in acquiring specific skills when they show interest)**

|  |  |  |
| --- | --- | --- |
| **Daily experiences for children 0-7 years**  | **How they build sound foundations for literacy** | **Basis in ‘biologically primary knowledge’** |
| Children’s, self-chosen, active, creative play (as often as possible, outdoors) | All–round bodily coordination and control; visual discrimination; problem-solving skills, etc. | Play is children’s inborn learning drive, and develops their motivation to learn |
| Moving to music, singing songs, chanting rhymes | Auditory discrimination and memory, and many other abilities that underpin literacy | Music and song come naturally to human beings and are highly motivating for young children  |
| Opportunities for interactive conversations (with adults and other children) about events/items of interest | Development of spoken language and listening skills  | Talk is the key way in which adults pass on knowledge and children consolidate their understanding  |
| Sharing stories and picture books (favourite ones over and over again) | Vocabulary development, auditory memory and listening skills, familiarity with narrative patterns, understanding of ‘how books work’ | *Homo sapiens* is ‘a storying animal’ so children love stories – and sharing them with beloved adults is a deeply satisfying emotional experience  |
| Opportunities for mark-making, painting, drawing, etc.  | Motor control, hand-eye coordination, symbolic representation | Children express their sense of agency by making their mark on the world |
| Encouragement to take an interest in letters (e.g. alphabet frieze/song/jigsaws) and words (e.g. spotting familiar roadsigns, signs/labels in shops) | Awareness of words/letters – what they are and what they’re for; appreciation that print is meaningful and useful in daily life  | Children know that, when adults take the trouble to talk about something, it matters.Talking about print helps them see why literacy is useful and desirable. |
| Opportunities to see adults reading and writing **by hand**,for real-life purposes  | Understanding of why literacy is important in daily life, and how it’s done | Mimicry is a vital learning drive. Children copy the behaviour of the adults they love and admire. |

**APPENDIX 2**

**SELECTION OF RESEARCH SUPPORTING UPSTART SCOTLAND’S CASE AGAINST EARLY FORMAL LEARNING AND ASSESSMENT OF LITERACY/NUMERACY SKILLS**

There are of our knowledge NO longitudinal studies showing that an early start on formal education confers a long-term advantage. The following research – which indicates that it is counter-productive – is from early-start English-speaking countries:

1. [‘Early educational milestones as predictors of life-long academic achievement, mid-life adjustment, and longevity’](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2713445/) by Margaret Kern and Howard S Friedman in*Journal of Applied Developmental Psychology*, 2008 found that ‘early school entry was associated with less educational attainment, worse midlife adjustment, and most importantly, increased mortality risk’.  The subjects were high-ability, middle-class Californians. (The findings were later included in*The Longevity Project* by Howard Friedman and Lesley Martin (Penguin, 2011)
2. ‘[Moving Up the Grades: Relationships Between Preschool Model and Later School Success](http://ecrp.uiuc.edu/v4n1/marcon.html)‘ by Rebecca Marcon in*Early Childhood Research and Practice*, 2002 looked at two groups of black American children, one taught formally at age 5 and one allowed to play.  Although the first group began school at an academic advantage, this decreased as time went on and by the age of 11 Group 1 was performing less well than the children who had begun formal education later.
3. ***Lasting Differences: The High/Scope Preschool Curriculum Comparison Study through Age 27*** by L Schweinhart and D.P. Weikart (Monographs of the High/Scope Educational Research Foundation. No. 10. Ypsilanti, MI. High/Scope Press, 1993).  This project followed three groups of disadvantaged children in the USA who had different educational experiences between 5 and 6 (A – structured teaching; B – free play; C play-based learning + daily structured discussion with the teacher).  Group A experienced many more emotional, social and behavioural problems during their subsequent school careers and more problems in social adjustment during adulthood.
4. ‘[Pathways to Reading: The Role of Oral Language in the Transition to Reading](http://cas.lehigh.edu/CASWebAdmin/Uploads/Documents/agn3/NICHD%20-%20Pathways%20to%20Reading%20%282005%29.pdf)‘ by the National Institute of Child Health and Development’s Early Child Care Research Network in*Developmental Psychology,* 2005. This concluded that  ‘environments rich in language stimulation and conversation will not only build general language skills but will also have the positive consequence of supplementing vocabulary and metalinguistic skills’. The reverse is not necessarily true. That is, simply teaching vocabulary and phonemic awareness, although perhaps necessary, would not be sufficient to buttress general language skills.
5. ‘[School Readiness: Integration of Cognition and Emotion in a Neurobiological Conceptualization of Child Functioning at School Entry](http://www.ncbi.nlm.nih.gov/pubmed/11899554)‘ by C Blair in*American Psychologist* 57, (2002)  US research review
6. ‘[The effect of school entrance age on academic achievement and social-emotional and emotional adjustment of children](http://onlinelibrary.wiley.com/doi/10.1002/1520-6807%28198901%2926%3A1%3C62%3A%3AAID-PITS2310260109%3E3.0.CO%3B2-1/abstract)‘ by Brenitz Z and Teltsch T in*Psychology in the Schools,* 1989
7. [*Lively Minds: distinctions between intellectual and academic goals for young children*](https://deyproject.files.wordpress.com/2015/04/dey-lively-minds-4-8-15.pdf) by Lillian C Katz, University of Illinois (DEY, 2015)
8. [*‘Early Social and Emotional Functioning and Public Health: the relationship between kindergarten social competence and future wellness’*](http://ajph.aphapublications.org/doi/pdf/10.2105/AJPH.2015.302630) by Damon E Jones PhD et al in American Journal of Public Health, online July 15th 2015 showed that, in a twenty year study, teacher-rated social competence in kindergarten [age 5] was a consistent and significant indicator of both positive and negative future outcomes across all major domains: education, employment, criminal justice, substance use and mental health.
(On the same day the [BBC reported a survey of 1,180 UK head teachers](http://www.bbc.co.uk/news/education-33566813), in which 66% rated pupils’ mental health as a major concern.)
9. [The Gift of Time: school starting age and mental health](http://www.nber.org/papers/w21610) by T Dee and S Sievertsen  (National Bureau for Economic Research, October 2015). A [follow-up report](https://qz.com/546832/stanford-researchers-show-were-sending-many-children-to-school-way-too-early/) in 2018 showed that the benefits of delaying formal schooling had persisted until age 11.
10. [*‘Children learning to read later catch up to children reading earlier’*](http://web.uvic.ca/~gtreloar/Articles/Language%20Arts/Children%20learning%20to%20read%20later%20catch%20up%20to%20children%20reading%20earlier.pdf) by Sebastian P Suggate, Elizabeth A. Schaughency and Elaine Reese in*Early Childhood Research Quarterly 28*, 2013 followed two groups of children in New Zealand : Group 1 began formal literacy instruction at age 5, Group 2 at age 7.  By the age of 11 there was no difference in reading ability level between the two, but the Group 1 developed less positive attitudes to reading, and showed poorer text comprehension than children who had started later.