



What to test and why



Findings from a Rigorous Literature Review of Assessment of Literacy and Foundation Learning in Developing Countries.

This policy brief presents some of the findings from a rigorous review of the measurement of children's acquisition of literacy (Nag, 2017). The review considered the types of assessment available and required to assess key skills and knowledge related to literacy development.

Briefing Note

Why assess?

There are two reasons why it is useful to assess children's learning and underlying skills:

- **Assessment can monitor educational quality.** There is a widely held assumption that communicating test results about what children can do (or cannot do) can influence educational quality and thereby lift children's attainments.
- **Assessment can inform teaching practice.** There is a strong assumption that teachers who assess well and use test information well, teach better. Evidence shows that teaching to the right level influences learning outcomes. Towards this aim, the synthesis collates measures that potentially could be part of a teacher's toolkit.

The literature review was underpinned by a Systems View of Reading, which sets literacy in the context of other language, cognitive and social skills¹. This view highlights the importance of developing complementary skills in tandem. The skills and knowledge that children require to read with meaning (symbol knowledge, oral language skills, emergent literacy skills, decoding and language comprehension) inform each other and develop together. They do not develop sequentially.

What to assess – Written language

Emergent literacy

Before children learn to read and write they develop a rudimentary understanding of how written language connects with spoken language. Early stimulation and talking to young children greatly influences the development of these skills. Children who come to the task of literacy learning with higher levels of emergent literacy do better, so this is worth assessing.

Symbol knowledge

Assessing symbol knowledge is useful because of the association between symbol knowledge and literacy attainment. The literature review found a moderate to strong correlation between symbol knowledge and reading accuracy across multiple languages.

When children learn about individual symbols that have more than one sound, they learn to analyse language itself in order to determine which sound is being indicated. Additionally, high frequency symbols and symbol clusters (eg 'r' and 'th' in English) are learnt faster by children than less frequent symbols and clusters. Symbol knowledge progresses from singleton units to symbol strings (orthographic chunks), like 'tion', 'sion' and 'cion'.

However, symbol measures behave differently across different languages (and orthographies). Performance is also very sensitive to instruction. For example, it is hard to pick up differences in learning achievement across the group when all children are taught letter-sounds.

To improve the ability of assessments to distinguish between children at similar levels of attainment, assessors could add clusters and affixes and frequent and uncommon symbols.

Reading accuracy (decoding or word recognition)

A critical part of reading comprehension is the ability to decode individual words. The association between being able to do this and being able to comprehend written text is seen among monolingual, bilingual and biliterate readers.

However, the pace at which children develop decoding skills differs across languages due to differences in symbol-sound linkages. The development of decoding skills is also sensitive to access to varied books and printed materials, which provides opportunities to practice these skills.

The assessment of reading accuracy is informative for monitoring educational quality and informing teaching practice because single word decoding is so critical for literacy learning.

¹ Perfetti, C., & Stafura, J. (2014). Word knowledge in a theory of reading comprehension. *Scientific Studies of Reading*, 18, 22–37.

The literature review found that words are sufficient to measure decoding skills and that the use of non-words or 'nonsense' words in assessment (while having become very popular) is not recommended. This is because children achieve similar ranks for word and non-word tasks and because inferences about children's abilities vary depending on the characteristics of the language that they speak. For example, some languages have less simple symbol-sound mapping rules than others with implications for how a non-word might be pronounced.

In addition, the development of non-words for assessment purposes is a specialist task requiring deep knowledge of the assessment language, and non-words can (unwittingly) send the message to teachers that classrooms activities should not focus on extracting meaning.

Spelling

Spelling is writing words accurately. In order to spell, children need to know about individual symbols and their sounds, the rules of sound-to-symbol mapping and the mechanics of writing (e.g. fine motor skills). There is a strong correlation between spelling accuracy and reading accuracy because both skills are directly linked to decoding competence. However, spelling tends to be harder than reading. This is because you have to recall every individual symbol to spell it, whereas it is possible to correctly read a word that you only partially recognise.

The level of decoding competence that a child needs in order to be successful at spelling differs greatly between languages. For example, spelling develops more quickly when sound-to-symbol mapping is simple and consistent.

The expression of spelling skills can be obscured by limitations in transcription skills (fine motor skills for using a pencil and writing complicated symbols). Assessors can remove the transcription component from tasks to avoid this. This can be done by asking the child to identify the correct spelling in a multiple choice format or providing symbol cards for the child to use to spell the word. However these approaches have not been evaluated for use across languages.

Reading fluency

Reading fluency is the ability to accurately read connected text at a speed similar to a conversational rate with expression and appropriate intonation. Reading fluency is made up of speed, accuracy and prosody. Prosody is the ability to mirror one's understanding of what is being read by using expression (to express, you must understand). However this nuance is often lost in most current reading fluency tasks. Reading fluency and reading comprehension show a strong association and reading fluency is a predictor of reading comprehension across languages.

The literature review found that assessment reports rarely describe how age- and grade-appropriateness have been established. In addition, reading fluency is more or less difficult depending on language and therefore, results are not comparable across languages.

Moreover, a focus on reading fluency as a measure of reading can set undesirable pedagogical targets, with teachers focussing on the mechanics of reading accuracy and speed, rather than reading for meaning.

Reading comprehension

Reading comprehension is the skill of extracting meaning from written text. Multiple strategies are used by skilled comprehenders to extract meaning. For example, as texts become more difficult, inferential skills and a range of reading strategies (such as looking back at the text) are increasingly used.

In older children differences in reading comprehension are associated with inflection knowledge, grammar awareness and vocabulary knowledge. Therefore, oral language proficiency is a foundation for reading comprehension.

Assessment of reading comprehension gives direct evidence of how well a child can read and how well a teaching programme is working.

Narrative writing

Multiple cognitive-linguistic processes underpin narrative writing. Of these, transcription, narrative generation and memory are three key components.

Among novice writers, expressive writing is seen as a telling of what they know when given a trigger ('writing whatever a prompt brings to their mind'²). Higher order processes of planning and writing for an audience is not yet evident. At this stage, the lack of automaticity with the mechanics of writing (transcription) may take away attention resources from generating the content for the writing. The constraints of transcription skills on narrative generation skills are closely linked to the nature of instruction. If instruction focuses on good handwriting and spelling, then these may quickly become automatic and no longer constrain content generation. But when a focus on transcription skills implies limited attention to expressive writing, an equally plausible outcome is the slow development of narrative writing skills.³ So, written language (e.g., a composition, a letter) is a window into the child's language skills with the strength of association between written and spoken language stronger once transcription skills have reached a certain level of automaticity and instruction has supported expressive writing.

It is useful to assess narrative writing because it gives both specific insights about component skills of writing and general insights about the education system. The assessment has the potential for direct inferences about what the child can do in the area of writing, what the child needs to do in order to write better and what the teacher can do to help the child write better.

² Babayigit, S., & Stainthorp, R. (2010). Component processes of early reading, spelling, and narrative writing skills in Turkish: A longitudinal study. *Reading and Writing: An Interdisciplinary Journal*, 23(5), 539-568.

³ Nag, S., Snowling, M.J. & Asfaha, Y. (2016). Classroom literacy practices in low- and middle-income countries: an interpretative synthesis of ethnographic studies. *Oxford Education Review*, 42 (1), 36-54. doi: 10.1080/03054985.2015.1135115

Things to watch

The literature review illuminates that:

- Measuring symbol knowledge is not comparable across languages.
- Words are sufficient to measure decoding skills. In fact, measuring non-words brings risks to the quality of the assessment (especially when translating instruments into different languages) and non-words can distract teachers from reading for meaning in their classrooms.
- Spelling measures and reading fluency are not comparable across language groups.
- While reading fluency is closely related to reading comprehension, reading fluency tasks in assessments can force a focus on the mechanics of reading – failing to nuance the need for expression as a reflection of understanding.
- Assessment of reading comprehension gives direct evidence of how well a child can read and how well a teaching programme is working.
- Narrative writing tasks are useful to assess the different components that make up 'writing skills'.

This brief was drafted by Rachel Outhred, based entirely on the *Rigorous Literature Review of Assessment of Literacy and Foundation Learning in Developing Countries*, by Sonali Nag.

