Phonological Awareness And Phonics: Linking Assessment with Instruction in Emergent and Early Literacy
Abstract

Phonological awareness and phonics are important in acquiring early reading skills. The recent focus on phonological awareness highlights the need to provide teachers with tools to assess phonological and phonics skills, and teaching strategies to move learning forward. This paper addresses how to use phonological and phonics skills assessment in early and emergent literacy to plan instruction for children who are at risk for reading difficulties. Research is integrated with practice, specifically by providing descriptions of tasks that assess key literacy skills and examples of tools to record observations, as well as explicit teaching strategies. Prior to discussing how to link assessment with instruction, information about phonological awareness and assessment is presented, including the role of phonological awareness in beginning reading, how phonological awareness develops, the effectiveness of phonological skills intervention, and assessment tools and what to assess.
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Appendices from pp. 43–61 involve assessment tasks and tools, and literacy activities that are in development and pending publication. Updates on how to obtain material will be posted at a later date, once information is published.
Dedicated to children
We value people who are literate. Our children need to acquire literacy skills that allow them to establish a position within dominant Canadian society. Otherwise we relegate them to the edges. We owe it to children to give them the keys to literacy. Unless children at risk for reading difficulties learn to read, they cannot assume real power at school or in the community.
Phonological Awareness and Phonics: Linking Assessment with Instruction in Emergent and Early Literacy

Introduction

There is converging and multidisciplinary evidence collected over more than 30 years about what children need to know in order to acquire beginning reading skills: phonological awareness, alphabetic awareness/phonics, fluency, vocabulary, and comprehension (Adams, 1990; National Reading Panel, 2000; National Research Council, 1998). Phonological and alphabetic awareness are critical to the successful development of beginning reading skills. Phonological awareness “requires the ability to hear and manipulate distinct speech sounds apart from meaning or the representation of speech sounds in print” (Sodoro, Allinder, and Rankin-Erickson, 2002, p. 224). Phonological awareness is distinct from alphabetic awareness, frequently referred to as phonics. While phonological awareness involves the oral manipulation of sounds, phonics is the association of letters and sounds to sound out written symbols (Snider, 1995, as cited in Chard and Dickson, 1999).

Attention to the importance of phonological and alphabetic awareness instruction has highlighted the need for appropriate curriculum-based assessment tools that provide information about these specific skills to help teachers monitor progress and adjust instruction. There is considerable research interest in identifying and assessing literacy-related skills such as phonological skills and letter-sound relationships early as they begin to emerge during the preschool years and as they continue to develop in early reading instruction. Whitehurst and Lonigan, 2001 advocate providing assessment and intervention at both the reading readiness and reading instruction levels for phonological skills.

Consider the following question that a kindergarten/grade 1 teacher might pose.

I use a phonological skills curriculum with my students. What assessment tools will help me determine the areas students are/are not making progress in beginning literacy? I need to be able to make informed interventions for individual students. It would be useful to share such information with parents to help them support their child’s learning.

Annette, kindergarten teacher

In other words, using a continuous assessment/teaching cycle, how can teachers use curriculum-based assessment strategies in an inclusive classroom to measure progress and plan instruction for children at risk for reading difficulties?

An answer to the question demands a consideration of the two connected components of assessment and instruction. First, assessment refers primarily to the “repertoire of behaviours involved in noticing, documenting, recording, and interpreting children’s behaviours and performances” (Johnston and Rogers, 2001, p. 377). Teachers currently face demands for planning and implementing literacy assessment. They are overwhelmed with the plethora of information about assessment required by administrators or endorsed for the classroom in professional training opportunities. Teachers have limited time and
need to know how to use phonological skills assessment tools and how to interpret and use the information they generate. Second, in terms of instruction, teachers need useable teaching strategies to move learning forward.

Abbott, Walton, and Greenwood (2002) reported that teachers are not well prepared to teach phonological skills. Many teachers lack sufficient knowledge and skills about how to develop children’s phonological skills and how to intervene with those at risk for reading difficulties. Teaching phonological skills seems to be neglected in teacher preparation programs (Abbott et al.; Moats, 1994, as cited in Spear-Swerling and Brucker, 2004). Spear-Swerling and Brucker (2004) reviewed several studies (Bos, Mather, Dickson, Podhajski and Chard, 2001; McCutcheon, Abbott, and Green, 2002; Spear-Swerling and Brucker, 2003), which demonstrate that even experienced early primary teachers lack knowledge about phonological skills. In a synthesis of research about early childhood teachers’ attitudes, beliefs, and practices, Stahl and Yaden (2004) found that teaching phonological skills, letter naming, and letter-sound relationships was considered less important than developing other literacy skills such as verbal and book reading skills.

Additionally, commercial early reading programs may be inadequate in terms of integrating research-based findings about critical skills of early reading. An analysis of phonological awareness instruction programs revealed that activities did not include critical skills of blending and segmenting, and did not provide enough materials, tasks, and scaffolding for teachers (Smith et al., 2001).

Teachers teaching literacy in inclusive classrooms today need knowledge and skills to address the needs of a diverse range of learners. Thus, there appears to be a need to provide teachers with information about the relative importance of phonological skills and phonics, and strategies for teaching such skills.

Prior to discussing assessment and how to use it to inform instruction, the role of phonological awareness and phonics in beginning reading instruction will be presented. The sections that follow provide information important to the understanding of beginning reading and assessment including:

- situating phonological awareness and phonics within literacy learning;
- overview of big ideas in beginning reading;
- phonological awareness; and
- assessing phonological awareness and phonics.

The final section links assessment and instruction by presenting research-based guidelines for assessing and teaching phonological awareness and phonics to children in kindergarten and grade 1. Since interventions for children who struggle need to be more explicit, intensive, and strategic, principles of curriculum and instructional design ground the presentation of teaching strategies for children at risk.

This paper integrates research with practice — specifically, with excerpts from a Teacher Guide that will accompany a literacy activity book for early primary students.
Descriptions of assessment tasks that assess key skills of beginning sound fluency, letter recognition fluency, phonemic segmentation, and efficiency in decoding and oral reading fluency, and examples of tools to record observations, as well as explicit teaching strategies are provided in boxes that appear throughout the paper. The information in these boxes will eventually appear in the Teacher Guide, in Assessment, and Meeting Individual Needs boxes. The examples provided in Meeting Individual Needs boxes target struggling children.

**Situating Phonological Awareness and Phonics within Literacy Learning**

Phonological awareness is an important aspect of literacy learning. As Lerner (2000) points out, teachers need to expose children to a wide range of literacy experiences that include phonics as well as meaningful text-based components. All children in an inclusive classroom benefit from rich language experiences and a strong foundation in phonological awareness and phonics. It is difficult to specify the ratio of phonological awareness and phonics instruction time to other reading and writing activities; however, Cunningham and Cunningham (2002) suggest a ratio of three to one. Phonological awareness and phonics can be integrated in daily literacy activities:

*Phonological awareness*
- teacher modeling during shared reading and writing
- peer modeling during interactive reading and writing activities
- independent reading and writing activities.

*Letter-name knowledge*
- word and word wall activities
- peer interaction and independent work.

*Letter-sound relationships*
- teacher modeling and think-alouds in shared writing
- peer modeling during interactive reading and writing.

(Toronto District School Board, 2002).

This writer’s ideas about literacy education come from a critical perspective: a developmental perspective about children’s learning; a constructivist perspective about how learners come to know; a child-centred philosophy about teaching; and critical theoretical perspectives about the importance of preparing individuals to operate from a position of power in our diverse Canadian society.

What constitutes excellence in literacy learning and assessment for this writer comes from earlier experiences as an educator, more recently, as a writer/editor of educational curriculum materials, and most recently through research. It is the writer’s view that there is more to teaching literacy than practising only what the research promotes. That is because there are elements of both art and science in literacy teaching. Art refers to the insights, skills, and experience that teachers offer while science refers to research-based knowledge about literacy that teachers use to inform their instructional planning and interventions. It is important to recognize the value of both of these aspects of teaching literacy. This paper does not therefore attempt to be prescriptive about curriculum-based
assessment and intervention but rather to provide information that may help teachers balance research-based practices with their own experiences of the children they encounter. The example that follows helps illustrate this point about teaching literacy.

**Teaching literacy**
Since the kindergarten teacher in the earlier example considers interaction with oral and written text a critical component of language arts instruction, she looks to find ways to integrate phonological skills and phonics with literacy experiences. A morning in the classroom might share some of the following features.

### A Literacy Experience in the Daily Life of a Class
Circle time provides opportunities for children to share events and participate in writing a daily message. The teacher uses the time to develop oral language skills and concepts about print by reading aloud a book about the seasons that uses a strong rhyming pattern. Children participate in whole class activities to help build on their experience of the story and develop phonological skills.

- Talk about story elements.
- Practise making predictions.
- Invite children to identify and say the rhyming words in a rereading. The teacher emphasizes the importance of attending to the final sounds of words.

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A sing-along and movement activity reinforces the learning about rhyming patterns. The teacher divides children into groups based on observations. She works with children individually and in small groups. For example:

- **Play a guessing game that encourages children to blend orally spoken sounds together to make a word.** The teacher tells children that the mystery words are items of seasonal clothing. The teacher verbalizes in a segmented fashion each sound (or phoneme) in sequence of a word (e.g., /m/…/i/…/t/). Children practise blending phonemes together to make the word. Volunteers can take turns providing segmented words for their peers to solve.

Independent work includes writing, practising literacy skills in a centre, handwriting, and reading. For example:

- Invite children to write and illustrate an alternative version of the story.

### Assessing literacy
The writer makes the assumptions that assessment is essentially formative in emergent and early literacy to improve instruction and to monitor progress, and that there is no need for high-stakes testing during this developmental period. Instead, assessment needs to be connected with the activities in a literacy-rich classroom. Many teachers use the artifacts of literacy experiences (e.g., anecdotal records, observations, story writing, story reflections) to assess their students. Such classroom-based assessments can provide objective and useful information. There are convincing arguments for using multiple forms of curriculum-based evidence that include both classroom and standardized assessment tools to monitor progress and plan instruction (Salinger, 2001).

In the classroom described above, assessment evolves from the classroom activities in which children participate. For example, the teacher uses a checklist to record ability to blend phonemes, while a colleague might use a standardized checklist. Each teacher chooses assessment tools that help make informed decisions about how to address the learning needs of each child.
Big Ideas in Beginning Reading

We know what works in beginning reading instruction (Adams, 1990; Coyne, Kame'enui, and Simmons, 2001; National Reading Panel, 2000). Big ideas highlight what is important in early literacy — the concepts, strategies, and ideas that children need to be successful. Simmons and Kame'enui (as cited in Coyne et al., 2001) identify five big ideas:

<table>
<thead>
<tr>
<th>Big Ideas in Beginning Reading</th>
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<tbody>
<tr>
<td>• phonological awareness — the ability to hear and manipulate sounds in spoken language</td>
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<tr>
<td>• alphabetic awareness/phonic — the ability to map individual sounds in words onto the letters of the alphabet</td>
</tr>
<tr>
<td>• fluency — the automatic ability to read words in connected text</td>
</tr>
<tr>
<td>• comprehension — the cognitive process that involves the interaction between reader and text to convey meaning</td>
</tr>
<tr>
<td>• vocabulary — the ability to understand and use words to gain and convey meaning</td>
</tr>
</tbody>
</table>

The big ideas can form the basis for curriculum, and teaching and assessment using a continuous cycle. Each big idea is important. For example, while phonological skills contribute to the development of reading skills, these skills alone are insufficient for developing reading skills. Most approaches to reading that concentrate heavily on phonics in isolation demonstrate little lasting impact (Brooks, 2003). Several studies demonstrate that providing instruction in phonological skills and the alphabetic principle improves reading ability more than phonological training alone (Ball and Blackman, 1988, as cited in Sodoro et al., 2002).

The big ideas will be examined more closely in the following discussion about how children learn to read. According to Birsh (1999) and Lyon (1997), children learn to read in the following way:

- **Phonological awareness** — **Learning that language is made up of sounds**
  Spoken language can be broken down in many ways including sentences into words and words into syllables, onset and rime (e.g., track into /tr/ and /ack/), and individual phonemes (e.g., camp into /c//a//m//p/). The skills involved in learning phonological awareness range in complexity from doing tasks such as identifying the individual words in a spoken sentence, separating syllables in words, making rhyming words, hearing that different words start with the same sounds, and counting the number of sounds (or phonemes) in a single word (Sodoro et al., 2002). The most complex level of phonological awareness is phonemic awareness. Phonemic awareness is the “insight that every spoken word can be conceived as a sequence of phonemes” (National Research Council, 1998, p. 52). For example, map is a word that is composed of three phonemes (i.e., /m/, /a/, and /p/). Children use phonemic awareness when blending, deleting, or moving phonemes within words or between words.
- **Alphabetic awareness/phonics — Making connections between sounds and print**

Children need to understand how sounds are connected to print and that printed letter symbols represent segments of sounds (Birsh, 1999). The idea that phonemes of spoken words are represented systematically in written form is called the alphabetic principle (Lyon, 1997).

Readers use the alphabetic principle to read a word as follows:

- translate letters into phonemes sequentially (e.g., the word map is translated into /mmm//aaa//p)
- recall the correct sequence of sounds
- blend the sounds together
- search memory for the word that matches the sounds

(Coyne, Kame'enui, and Simmons, 2001)

Making meaning from text requires strong word recognition skills (Lyon and Moats, 1997). Children at risk for reading difficulties often lack such skills (Coyne et al., 2001).

- **Automaticity — Developing reading fluency**

In order to comprehend what they read, readers need to be able to sound out new words quickly and develop skill in reading larger units of print (e.g., roots, suffixes, prefixes, syllables, complex words) (Birsh, 1999; Lyon, 1997). Children who can’t read fast enough are at risk of not understanding what they read. They expend so much energy and time decoding individual words that they lose the meaning of the sentence. Children vary in the amount of practice they need to develop fluency; the average child needs from four to 14 exposures to a word to develop automatic recognition (Lyon, 1997). As children read more fluently, they move from reading letter by letter to reading words in chunks.

- **Vocabulary Development — Building word power**

Children need exposure to rich vocabulary. Vocabulary can be developed through early literacy experiences and exposure to rich literature using Big Books, stories, and poems, which are all part of learning to read (Birsh, 1999; Shankin and Rhodes, as cited in Lerner, 2000).

- **Comprehension — Building meaning from print**

Children with strong comprehension skills are good at relating what they read to what they know; have large vocabularies; and can predict and summarize what they have read (Lyon, 1997). Lyon says that children construct meaning on two levels: literal and reflective. After children understand the literal meaning of text, they need to begin asking themselves reflective questions (e.g., purpose of reading, author's point of view) that lead to understanding.

As mentioned previously, there is research interest in identifying literacy-related skills that emerge before formal reading instruction begins. A consideration of the areas of emergent literacy knowledge that flow into early literacy and how phonological skills and phonics integrate with other aspects of literacy is presented.
Emergent and early literacy

Children come to beginning reading instruction with a base of literacy knowledge. The period that begins in preschool and early kindergarten before formal reading instruction is provided is called emergent literacy. Emergent literacy has to do with awareness of print, relationship of print to speech, text structure, phonological awareness, and letter naming and writing (Gunn, Simmons, and Kame‘enui, 1998). “Each of these areas develops concurrently and interrelatedly, and continues to develop across the preschool and kindergarten period” (Gunn et al., 1998, p. 27). Whitehurst and Lonigan (2001) report on the evidence that indicates foundational skills of phonological processing, print awareness, and oral language affect learning to read. Children with more of these skills learn to read sooner and better than children with less of these skills. Children with few skills are not well prepared for formal beginning reading instruction. It is this writer’s position then that it is important to monitor progress at both the reading readiness and reading instruction levels.

Phonological Awareness

Considerable research has shown that the most powerful predictors of success in early reading are the ability to isolate phonemes, or the individual sounds in a word, and knowing the alphabet letters — both aspects of phonological skills (Adams, 1990; Hintze, Ryan, and Stoner, 2003; Share and Stanovich, 1995; Share, Jorm, Maclean, and Mathews, 1984; Torgesen, Wagner, and Rashotte, 1994). Specifically, phonological skills relate to accurate and fluent identification of words and the application of knowledge about letters and sounds to decode unfamiliar words (Lyon, 1997; Share and Stanovich, 1995; Vellutino and Scanlon, 1991, as cited in Sodoro et al., 2002). Phonological deficits thus lead to poor decoding skills (Stanovich, 1988; Vellutino et al., 1996, all cited in Langdon, 2004). Consequently, it follows that reading words accurately and fluently is related to reading comprehension (Stanovich, 1988, as cited in Sodoro et al., 2002). What this means for children with deficits in phonological skills is that they experience difficulties with word identification, which, in turn leads to difficulties in comprehension.

Therefore, children need an understanding of sound patterns in words before they can benefit from phonics, spelling, and reading instruction.

Several key points emerge from the discussion about phonological awareness and phonics, the big ideas in beginning reading, and emergent and early literacy that pertain specifically to the focus on assessment and instruction for beginning reading in kindergarten and grade 1.

1. Developing phonological awareness is important particularly in kindergarten to provide a foundation for coming to understand the alphabet (Adams, 1990; Coyne et al., 2001; National Reading Panel, 2000). Phonological awareness instruction should begin before formal reading instruction as it benefits all children — not only children at risk (Smith, Simmons, and Kame‘enui, 1998, as cited in Smith et al., 2001).
Children should have opportunities to work with the sounds of language in the absence of print before beginning to process sounds and letters (Smith et al., 2001).

2. Phonological tasks such as phonemic segmentation are strong predictors of beginning reading ability (Kaminski and Good, 1996; Wagner et al., 1997; Yopp, 1988, all cited in Oudeans, 2003) and the ability to blend and segment phonemes in words is a critical precursor for learning to read (Ball and Blachman, 1991; O’Connor, Jenkins, and Slocum, 1995; Torgesen, Morgan, and Davis, 1992, all cited in Oudeans, 2003; Smith et al., 2001).

3. Phonological awareness is necessary but not sufficient for learning to read. Phonological instruction is most effective when it is integrated with alphabetic skills such as letter-sound relationships (National Reading Panel, 2000).

**Development of phonological awareness skills**

Phonological skill development follows a predictable developmental progression (Berg and Stegelman, 2003). Table 1 provides information about the acquisition of specific skills. The more advanced skills such as recombining and deleting phonemes develop along with reading instruction (Berg and Stegelman).

<table>
<thead>
<tr>
<th>Typical Age of Mastery</th>
<th>Skill</th>
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<tbody>
<tr>
<td></td>
<td>recite rhymes</td>
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<tr>
<td></td>
<td>rhyme by pattern</td>
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<tr>
<td></td>
<td>alliteration</td>
</tr>
<tr>
<td>3</td>
<td>count syllables (50% of children)</td>
</tr>
<tr>
<td>4</td>
<td>count syllables (90%)</td>
</tr>
<tr>
<td>5</td>
<td>count phonemes (&lt;50%)</td>
</tr>
<tr>
<td>6</td>
<td>match initial consonants</td>
</tr>
<tr>
<td></td>
<td>blend 2 to 3 phonemes</td>
</tr>
<tr>
<td></td>
<td>count phonemes (70%)</td>
</tr>
<tr>
<td></td>
<td>identify rhymes</td>
</tr>
<tr>
<td></td>
<td>divide onset-rimes (e.g., c-at)</td>
</tr>
<tr>
<td>7</td>
<td>blend 3 phonemes</td>
</tr>
<tr>
<td></td>
<td>segment 3 to 4 phonemes</td>
</tr>
<tr>
<td></td>
<td>spell phonetically</td>
</tr>
<tr>
<td></td>
<td>delete phonemes</td>
</tr>
</tbody>
</table>

(California Comprehensive Leadership Program, as cited in Berg and Stegelman, 2003)

**What do teachers need to know?**

Phonological skills are teachable (Adams, 1990; National Reading Panel, 2000). Teachers need to know how to help children learn about the sound structure of language. They need to understand phonological awareness and teach skills such as blending individual phonemes into words and segmenting individual sounds in words. They need to have an understanding of how phonological skills range in complexity (see Figure 1). Phonemic awareness is the most complex level of phonological awareness. Children use
phonemic awareness when blending, deleting, or moving phonemes within words or between words.

Figure 1: Continuum of complexity of phonological awareness activities

Teachers might incorporate Adams’ (1990) five levels of tasks that help children understand the phonological sound structure of language.

**Levels of Tasks**

1. Develop an ear for sounds through learning nursery rhymes and getting a sense of patterns in rhymes and songs (e.g., the wheels on the bus go round and round...).
2. Compare and contrast sounds in alliteration or rhymes.
   - Match sounds (e.g., beginning sound – pot, pump, bike; end sound – pig, mat, leg; middle sound – dig, Sam, kick).
   - Recognize rhyming words (e.g., rake, axe, lake).
3. Blend individual phonemes into a word (e.g., /ppp/iii/n/).
4. Isolate individual phonemes and subsequently delete, reorder, or add more phonemes (e.g., “Say lake. Say lake without /l/.”).
5. Hear, segment, and tap out individual phonemes in words (e.g., say a word sound by sound such as “/d/.../o/.../ck/” for dock).

Teachers need to know how to enunciate basic phoneme sounds correctly (e.g., isolate the /p/ sound rather than stretching it out /puh-uh-uh/) (Abbott et al., 2002).

Teachers need to know how to select developmentally appropriate interventions. For example, children need to work at the concrete level and match sounds with objects and pictures before moving to an abstract level where they match sounds with words. Finally, teachers need to know how to teach strategies, and use scaffolding (Smith et al., 2001) to help struggling children.
**Phonological awareness intervention**

Since phonological skills are key in learning to read, it follows that early identification and intervention are critical to success in improving outcomes for children who may struggle with reading skills. The issue of when to intervene in a child’s development, however, has not been resolved.

“The question of how early to intervene continues to be problematic and centrally involves assessment” (Johnston and Rogers, 2001, p. 379). Clay (as cited in Johnston and Rogers) recommends letting children participate in a literate environment in preschool or kindergarten before beginning to assess for intervention purposes. Clay’s rationale is that most children develop some literacy skills in the first year of a preschool or kindergarten program, if not before they arrive. She argues that since children vary in their exposure to literacy, a child who arrives with little literate experiences might be judged prematurely as experiencing difficulties learning. However, in the writer’s analysis, there is a significant distinction between an emphasis on monitoring progress to inform instruction in emergent literacy and an emphasis on making judgements about a potential learning disability.

The writer made a decision to focus on emergent and early literacy since it may be possible to identify and intervene with children at risk for reading difficulties even before formal reading instruction begins. Scanlon and Vellutino (2001) found that language-based measures such as letter identification, phoneme awareness, and rapid naming are good predictors of reading achievement in grade 1. Sodoro et al. (2002) recommend assessing phonological skills even before early reading instruction begins as a way to identify children who may be at risk and also after reading instruction begins to intervene with children who continue to struggle with reading.

How effective is phonological awareness intervention? The research shows that children benefit from direct instruction in phonological awareness and phonics — especially children at risk (Foorman, Fletcher, Francis, Schatschneider, and Mehta, 1998; Torgesen, et al., 1994). Children with low phonological awareness showed improvements in reading after receiving phonological awareness intervention (Ball and Blachman, 1991; Brady, Fowler, Stone, and Winbury, 1994; O’Connor, Jenkins, Leicester, and Slocum, 1993; Torgesen, Morgan, and Davis, 1992, all cited in Sodoro et al., 2002). Children at risk who receive early and intensive intervention that target their individual strengths and weaknesses before a serious discrepancy develops between their literacy skills and those of their peers, have a much better chance of developing subsequent skills at a rate comparable to their peers (Scanlon and Vellutino, 2001; Share and Stanovich, 1995; Torgesen et al., 2001, as cited in Coyne, Kame’enui, and Simmons, 2004). Scanlon and Vellutino argue that difficulty in reading often results from deficits in early literacy experiences and instruction rather than deficits in cognitive function.

However, there are children who do have language impairments. Phonemic awareness and letter knowledge do not guarantee that a child will decode words efficiently (Byrne and Fielding-Barnsley, 1991, 1993, 1995, as cited in Sodoro et al., 2002). Arguably, early
intervention can be used for directing struggling children to diagnostic services or more intensive and specialized remediation.

Early and timely intervention depends on the use of adequate assessment measures. In all cases, teachers need to identify those children who are not progressing so they can adjust instruction accordingly.

This section of the paper begins with a discussion about curriculum-based assessment that helps teachers monitor progress and make ongoing instructional adjustments. The vital importance of using both standardized and classroom-based assessment is addressed, with an emphasis on using the artefacts of daily literacy experiences for assessment purposes. It continues with a discussion of quality issues teachers need to consider when selecting assessment tools and ends with a summary of specific phonological skills to assess.

**Assessing Phonological Awareness and Phonics**

Assessment is essentially formative in emergent and early literacy to improve instruction and to monitor progress. The broad purpose of assessment might be identified as moving learning forward for all children and responding to difficulties that struggling children experience. Annette, the kindergarten teacher who posed the question earlier in the paper might identify her purposes as assessing progress toward acquiring pre-reading and early reading skills and evaluating the effectiveness of instruction. More specifically, she might identify questions such as:

- Which children have poor phonological skills?
- Which children need more phonological skills?
- Which children are not making progress?
- Are interventions working to improve phonological skills?

Teachers can use the curriculum as a starting point to identify specific learning outcomes to assess. Since curriculum-based tools are appropriate to monitor progress and to inform teaching (Fuchs and Fuchs, 1999; Sodoro et al., 2002) teachers can gather multiple forms of evidence using a curriculum-based approach.

<table>
<thead>
<tr>
<th>What to Assess</th>
<th>Assessment Methods</th>
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<tbody>
<tr>
<td>• determine child's rate of progress in acquiring phonological skills</td>
<td>Curriculum-based assessments (CBA) record progress over time on phonological and alphabetic awareness skills, and fluency and accuracy.</td>
</tr>
<tr>
<td>• determine fluency in phonological skills</td>
<td>CBA includes standardized and non-standardized, and formal and informal assessment tools.</td>
</tr>
</tbody>
</table>
**Curriculum-based assessment**

Curriculum-based assessment allows for continuous measurement of progress toward goals over time and focuses on integrating skills and strategies addressed in the curriculum (Fuchs and Fuchs, 1999). Several forms of curriculum-based or classroom-based assessment exist.

- School-, district-, or province-wide standardized systems with formal procedures to gather data to serve the needs of the classroom and external uses; and
- Locally developed classroom-based systems (e.g., observations, checklists, learning logs, running records, teacher-student conferences).

**Standardized systems**

Curriculum-based measurement (CBM), one type of standardized assessment that has been researched extensively (Deno, 1985, as cited in Sodoro et al., 2002) allows teachers to measure progress frequently using standardized procedures. In one CBM approach, for example, picture naming is a behavior of interest, and teachers measure progress by recording the number of pictures named correctly per minute (Priest, 1998, as cited in Phaneuf and Silberglipt, 2003).

A teacher who uses CBM establishes broad and specific long-term outcomes tied to the curriculum. Then the teacher asks children to perform tasks that measure specific skills at different points over the course of the year. Performance is measured through repeated observations of each identified skill. The slope on each child’s graph indicates growth toward a skill outcome (McConnell, Priest, Davis, and McEvoy, 2002, as cited in Phaneuf and Silberglipt, 2003). At the beginning of the year, performance will be low; as the year progresses, performance should gradually improve (Fuchs and Fuchs, 1999).

For example, a CBM called Dynamic Indicators of Early Literacy Skills (DIBELS) (Good and Kaminski, 2002) is a set of standardized measures based on the phonological and reading fluency skills critical to beginning reading, as defined by the National Reading Panel (2000) and the National Research Council (1998). Specifically, DIBELS measure letter naming, onset-rime, segmentation, and nonword decoding. In addition to phonological awareness skills, it provides information about fluency and accuracy. Teachers can use each measure, which takes about a minute per child, to regularly monitor progress in kindergarten and grade 1. Refer to Informal Measures (Appendix 1, page 40) for a more detailed description of DIBELS measures. Note that the DIBELS assess only the measures that correspond to the big ideas in literacy (i.e., phonological awareness, alphabetic awareness/phonics, and accuracy and fluency in connected-text reading).

Children who fall below the established benchmarks for each measure need intervention. DIBELS measures are reliable and valid indicators of early literacy and predictive of later reading proficiency (Fuchs, Fuchs, and Compton, 2004; Hintze et al., 2003). The results provide teachers with progress monitoring and benchmark data — an appealing feature for education systems pursuing a performance-based accountability model.
A disadvantage of DIBELS is that only a limited number of pre-reading skills (i.e., initial sound fluency, phonemic segmentation and nonsense word fluency) have been developed, which might lead teachers to measure growth in isolated skills alone (Fuchs and Fuchs, 1999).

Many teachers are dissatisfied with standardized tests for a number of reasons. Teachers may not be willing to spend limited time testing, graphing, and comparing slopes to make instructional decisions. Tests don’t often provide teachers with specific enough information and support to plan for change (Salinger, 2001). For example, the DIBELS provides data about general improvement in accuracy and does not generate specific information (e.g., identifying which initial sounds present difficulty). Additionally, “teaching to the test” compromises a constructivist approach to early literacy learning. Standardized tests can result in a disparity between what and how children learn and how their progress is tracked (Salinger, 2001).

Classroom-based systems
Many classroom-based assessment systems share common features such as the constructivist nature of emergent and early literacy learning (Salinger, 2001). In a recent survey of early reading assessments, Paris and Hoffman (2004) found that more than half the non-commercial measures used by K–3 teachers were based on observation or on-demand methods for evaluating performance. Teachers provide tasks that invite children to show what they know and can do in classroom activities. Observations, checklists, and running records are collected in portfolios that document performance and progress across a range of skills.

Running records are described in more detail. Refer to Oral Reading Recording Sheet (Appendix 10, page 60) for an example of a running record.

Running Records
Clay’s (1993) running records can be used to determine accuracy and fluency. Running records require collecting data and analyzing literacy skills (e.g., consonant-vowel-consonant word recognition, strategy use, comprehension) to identify what a child needs to learn next. Using unfamiliar text, children might be asked to read a passage that contains familiar sight words and CVC vocabulary. The teacher compares CVC word errors with the number of CVC words read correctly and determines an accuracy percentage. Children can be asked to retell the story to determine comprehension skills.

Clay established a 90–95% level of accuracy as the instructional level. Each running record can be analyzed about the kinds of errors made to evaluate use of strategies such as decoding.

Running record data reveal what a child can do and what a child needs. The information is important to inform instructional decisions such as grouping, selection of activities, prompting and scaffolding needs, and next steps (Hebert, 2004).

Meisels and Piker (2000, as cited in Paris and Hoffman, 2004) found that 70% of the skills were assessed using observations and that most often the data were recorded in checklists (69%) and anecdotal observations (45%). The researchers found little evidence of reliability and validity. But as Hoffman and Paris point out, skills such as phonemic
awareness, concepts of print, and letter-sound knowledge are learned in relatively short developmental periods. “Consequently, the distributions of data from these variables are skewed by floor and ceiling effects that, in turn influence the correlations used to establish reliability and validity of the instruments” (Paris and Hoffman, p. 214).

Paris, Paris, and Carpenter (2002, as cited in Paris and Hoffman, 2004) surveyed 504 K–3 classroom teachers about how they use reading assessment. They found that most K–3 teachers use all types of assessment (i.e., performance (86%), teacher-designed (82%), word attack/word meaning (78%), measures of fluency and understanding (74%), commercial (67%), and standardized (59%) assessments). The survey showed that although most teachers use a variety of assessments, teacher-designed assessments were used most frequently.

Several conclusions can be made from Paris and Hoffman’s (2004) synthesis of the research about early reading assessment.
• There are a large variety of commercial and informal reading assessment tools available. It requires a skilled teacher to select and adapt appropriate tools to their own purposes.
• Teachers in K–1 are more likely to assess awareness about print and phonics than teachers in older grades, and they are most likely to use observations. The most common response option for K and a grade 1 child is recognition rather than identification and production.
• Teachers believe that using informal measures that they design and select is more useful for teachers, children, and parents than commercial assessments.

**Challenges in using classroom-based assessment**

There are challenges to developing and using classroom-based assessment tools. First, teachers need to understand the importance of collecting data systematically in order to produce data that are useful for planning instruction.

Second, teachers need to make decisions about how to evaluate progress. Researchers have not come to agreement about what constitutes adequate progress in reading skills. Typically, in the literature, researchers use performance level and growth rate measures as indicators of reading progress (Al Otaiba and Fuchs, 2002). It is important to avoid considering either measure in isolation. For example, although an individual’s performance level is low, it is difficult to determine response to intervention unless the teacher considers growth rate. Similarly, using only growth rate to measure progress ignores an individual’s performance level relative to learning expectations. An individual might be making progress but be performing at such a low level that competency won’t be achieved without specialized intervention. Fuchs and Fuchs (1998, as cited in Fuchs, Fuchs, McMaster, Yen, and Svenson, 2004) recommend using a dual discrepancy approach in which children are classified according to discrepancy from peers in both performance level and growth rate. Children who are discrepant from peers in both performance level and growth rate are judged to be nonresponders (Fuchs, Fuchs, McMaster, et al., 2004).
What does this mean for teacher practice? Teachers might assess a child’s entry-level performance and measure progress. One way to establish entry level is by graphing measurement points before instruction begins and then adding data points to the graph over the course of the year. Teachers can check the slope for each measure of a child’s progress. Instruction might be modified for children who are making little or no progress by providing more scaffolding (e.g., chips and letter tiles that children can move to segment words). Or, the teacher might put children experiencing difficulty in flexible groups and provide more intensive instruction.

Third, teachers need to consider quality issues in making decisions about which assessment tools to use.

**Quality issues in assessment**
Quality issues of reliability, validity, and record keeping are important in classroom assessment (Earl and Katz, 2004), and teachers need to take these issues into consideration when making decisions about the assessment tools they intend to use.

**Reliability**
Reliability refers to the certainty that the assessment process provides enough consistent information to make a judgment about a child’s learning (Earl and Katz, 2004). Ways to improve reliability include increasing the number of assessments taken over time (Johnston and Rogers, 2001) and using a variety of assessment tasks (e.g., formal, informal) to provide a broad range of information, and processes (e.g., rubrics, checklists, running records). Teachers need to have some expertise in assigning values to the collected pieces of evidence (Salinger, 2001). Earl and Katz (2004) recommend that teachers collaborate with other teachers to review and judge student work.

**Validity**
Validity refers to the “accuracy of an assessment in measuring what it purported to measure and the extent to which interpretations of assessment data can be supported by independent evidence” (Salinger, 2001, p. 397). Teachers need to be able to provide evidence that the interpretations made about a child’s performance are appropriate. Whether or not a particular assessment tool is useful depends on what teachers know about how to develop literacy (Johnston and Rogers, 2001). There needs to be a match between teaching and assessment practices.

**Keeping Track**
Teachers who use assessment tools need to keep excellent records. The records provide concrete evidence for the instructional decisions that teachers make, which can be shared with parents, children, and specialists. See following excerpt in the Teacher Guide about managing assessment.

**Teacher Guide**
**Manage Assessment**
Organize phonological assessment materials in a readily accessible location.

- literacy portfolio for each child containing a checklist of developmentally appropriate phonological and alphabetic skills and strategies for the emergent and early learner. See **Emergent and Early Literacy Skills Observation Checklist** (Appendix 2, page 42).
- running record forms
- observation checklists
- sets of pictures or wordless books (or small objects) to check phonemic awareness; words, levelled text, and letter tiles to check phonological skills
Selecting assessment tools

In addition to considering concerns about quality, teachers might consider the following criteria in selecting standardized or locally developed assessment tools:

• teacher-friendly
• efficiency in administering, scoring, and analyzing data
• provides useful information for monitoring progress and adjusting instruction (Hintze et al., 2003)
• directly related to learning outcomes.

There is another factor to consider in the decision about using standardized or locally developed tools. From the writer’s experience, a teacher needs to have excellent classroom management skills and a classroom where children have learned how to work independently, in order to free her to observe individual children working. Teachers need to know how to manage their time and how to score and interpret a child’s work. Standardized tools such as the DIBELS are quick to administer, provide scoring scales, and indicate when intervention is needed; locally developed classroom tools may not be quick to use depending on a teacher’s skill and experience, and the criteria for interpreting data need to be developed. Ongoing professional development will help teachers master developing and administering a classroom-based assessment system (Salinger, 2001).

Even though the research evidence weighs heavily in favour of standardized tools such as the DIBELS, this writer promotes the use of locally-developed assessment tools that are closely tied to the literacy curriculum and which can provide specific information about a child’s confusions to plan for intervention. A developmental approach that reveals a child’s developing skills provides the best evidence of strengths and weaknesses and next steps.

What to assess in phonological and alphabetic awareness

Which assessment tools provide the best evidence about children’s progress in phonological and alphabetic awareness? There is no single assessment that can adequately measure these complex skills. The research recommends using multiple assessments throughout kindergarten and grade 1 to monitor progress and identify children who lag behind expected levels of learning (Chard and Dickson, 1999; Good, Simmons, and Kame’enui et al., 2002, as cited in Schatsneider and Torgesen, 2004).

The research indicates assessment needs to highlight the importance of key emergent and early literacy skills such as phonological skills, letter knowledge, and letter-sound relationships. Schatsneider and Torgesen (2004) make the following recommendations about what and when to assess for progress.
Emergent — before children learn to read (kindergarten and early grade 1)

- Assess phonemic awareness and rapid naming of objects, colours, numbers, or letters. Letter-name knowledge (early kindergarten) and letter-sound knowledge (later kindergarten) are equal or better predictors of early word reading difficulties than either phonemic awareness or rapid naming ability.

Early — after children begin to learn to read (e.g., mid first grade and beyond)

Some measures overlap those used in kindergarten depending on an individual child’s progress. Monitoring progress in reading at the word level needs to include out-of-context measures of word reading ability, decoding (i.e., nonsense or real words), and reading fluency (Torgesen, 1998, as cited in Berg and Stegelman, 2003).

- Assess decoding efficiency (i.e., blending and segmenting) and reading fluency (not phonemic awareness) (Torgesen, Otaiba, and Grek, 2004, as cited in Schatsneider and Torgesen, 2004).

Kaminski and Good (1996, as cited in Abbott et al., 2002) state that three measures of early literacy skills are adequate to measure progress in kindergarten and early grade 1: initial sound fluency; letter recognition fluency; and oral phonemic segmentation. After children learn to read, teachers can assess for efficiency in decoding and fluency. For busy teachers, these measures might form the basis for making instructional decisions about children who are not making adequate progress. After taking into consideration the variability in developmental readiness, the teacher might also make referrals for children who are struggling.

In conclusion, although teachers do assess other skills in literacy such as concepts of print and comprehension strategies, this paper isolates assessing the skills of phonemic awareness (including beginning sound and segmenting), letter knowledge, letter-sound relationships, decoding ability, and reading fluency, in order to present teaching strategies grounded in principles of instructional design that help children develop phonological and phonics skills.

Linking Assessment with Instruction

Effective literacy intervention links differentiated instruction with assessment that is based on monitoring progress in phonological and alphabetic awareness. The remainder of the paper presents how to integrate classroom-based assessment with instructional interventions for children at risk.

Before presenting assessment tools and instructional interventions, principles of instructional design will be considered in order to provide teachers with background information about critical features of effective interventions for children at risk.

The boxes are part of a Teacher Guide about how to teach and assess phonological and alphabetical awareness. They are directed to teachers who teach kindergarten and grade 1. The voice is necessarily different from the voice of researchers as the Teacher Guide translates research information into a teacher-friendly format.
Instructional design principles

The design principles, which are being used to structure the Teacher Guide, are adapted from numerous studies and investigations and developed by Kame’enui and Carnine (1998, as cited in Smith et al., 2001; Coyne et al., 2001). The principles include focusing on phonological skills, phonics, and fluency; making strategies conspicuous; and providing scaffolding. “These three principles represent minimum criteria for designing tools for children who may need additional support in learning to read” (Smith et al., 2001, p. 27). The content of the instruction is derived from a synthesis of the research presented earlier in the paper about phonological and alphabetic awareness and is integrated within the principles of instruction to produce the framework for the Teacher Guide. Each instructional principle is elaborated in the following section.

1. Phonological skills, phonics, and fluency

After children are able to detect phonemes, instruction should focus on blending and segmenting words at the phoneme level, as they are the essential phonological skills for early reading (National Reading Panel, 2000). There should be less emphasis on other phonological skills (e.g., counting syllables, deleting/substituting phonemes, rhyming) (Coyne et al., 2001; Smith et al., 2001).

Fluency refers to the speed and accuracy of reading text orally. Fluency intervention refers to increasing a child’s reading fluency at the word level or the connected-text level (Chard, Vaughn, and Tyler, 2002). For fluency building, children should be able to accurately identify at least 95 percent of the text (Coyne et al., 2001).

2. Teach Strategies

Strategies are sequences of actions that teachers model to make explicit the steps to solve a problem, such as hearing and manipulating sounds in a word. Since research suggests that children don’t identify phonemes in the absence of instruction (Lieberman and Shankweiler, 1985, as cited in Smith et al., 2001) children need to learn strategies to make phonemes conspicuous and use the knowledge to help them decode words. Features of teaching strategies include: teacher modeling of specific sounds; child producing specific sounds; and making mental manipulations of sounds overt using concrete methods (Smith). For example, to blend sounds in a word, the teacher models saying the sound that corresponds to each letter; and then put the sounds together by saying the sound of each letter in sequence fast. The teacher moves a chip underneath each letter as she pronounces its sound. The child repeats the steps the teacher modeled. Essentially, the teacher makes strategies overt by teaching them explicitly in a systematic and sequential way (Coyne et al., 2001; Smith et al., 2001).

In a review of literature, Schmidt, Rozendal, and Greenman (2002) identified that teaching children to be active strategic readers can help struggling readers. They suggest that children need to have opportunities to share the strategies they develop independently. Working with peers provides opportunities for that to happen.
3. Provide Scaffolding
Scaffolding is a process in which teachers provide external supports to coach children through the difficult parts of a task. Adjusting tasks, varying materials, and teacher support are examples of scaffolding. For example, tasks can be adjusted by reducing the number of phonemes in a word (e.g., *bat* is easier than *blank*); focusing on initial sounds before moving on to final sounds and medial sounds; and beginning instruction with continuous sounds (e.g., /s/ is easier than a stop sound such as /p/) (Chard and Dickson, 1999; Smith et al., 2001).

Instruction should move from being teacher-directed to being child-directed. After the teacher models a skill many times and provides models of strategies, gradually the child assumes the responsibility for demonstrating the skill. Initially, scaffolding provides a structure to guide children so that they can be successful. The amount of assistance gradually decreases as children get more experience. Scaffolding can be eliminated after children demonstrate mastery of a skill. It is important to match the level and duration of scaffolding with the individual needs of a learner.

Instruction should begin with easy tasks and progress to more challenging ones (Coyne et al., 2001). The guidelines for teaching phonics developed by Stewart and Cegelka (as cited in Lerner, 2000) are an example of scaffolding. The guidelines are adapted in the Teacher Guide notes about scaffolding.

**Teacher Guide**

**Instructional Design Principles**

Three principles inform intervention for kindergarten and grade 1 students who struggle with pre-reading and early reading skills: emphasize phonological awareness, phonics, and fluency; teach strategies; and use scaffolding.

**Phonological awareness skills, phonics, and fluency**

- **Develop Phonological Awareness**

  All children — not only those at risk for reading delays benefit from instruction in phonological awareness prior to formal reading instruction. Blending and segmenting words at the phoneme level are essential skills for early reading. Focus on blending and segmenting activities and provide multiple opportunities for practice.

  1. Teach blending as an auditory task. Children orally blend individual phonemes together to make words (e.g., the sounds *ccc/aaa/t* make the word *cat*).
  2. Teach segmenting as an auditory task. Children orally segment words into individual sounds (e.g., the sounds in *dog* are */d.../o.../g.../).*
• **Develop Alphabetic Awareness**
  Provide children with multiple opportunities to practise alphabetic awareness.
  1. Use miniature objects/pictures that represent consonant-vowel-consonant words (e.g., fan, cat, pan). Model using letter tiles to form words that represent objects.
     – Choose an object and use letter tiles to spell its name. Then, model how to blend individual phonemes together and say the word (e.g., /ccc/aaa/t/). Repeat with other objects. Ask children to repeat blending the phonemes each time.
  2. Choose an object and ask children to spell the word it represents. Exaggerate the articulation of each phoneme segment as you form the word (e.g., /f...a...n.../). Slide your finger underneath each phoneme as you pronounce it. Ask children to repeat after you.
     – Ask the child to choose an object and segment the word into individual sounds. Tell them to use letter tiles to form the word.
     – Ask children to use letter tiles to form the words for each object independently. Children can record the words they build.

• **Develop Fluency**
  Invite children to do repeated readings of highly decodable familiar text. Pair them with a peer tutor who can help. To build fluency, children should be able to accurately identify most of the text. Choose texts with a high number of decodable words to set up children for success.
  1. Children identify familiar letters and words on the Word Wall or on other environmental print in the classroom, or from word lists.
  2. Ask peer tutors/volunteers to listen to children do repeated readings of familiar text.

**Teach Strategies**
  Model how to do each activity when you introduce it.
  Provide explicit instruction to make strategies conspicuous.
  Model problem solving aloud. Talk about your thinking out loud using simple and clear language (Adapted from Alberta Learning, 2002).

• **Phonological Awareness**
  Teach how to say individual sounds in words.
  1. Model skills by drawing attention to the sounds in words and talking out the strategies (e.g., “I will say each sound in frog and at the same time I will touch a finger.” Touch three fingers.).
  2. After you model, give children the opportunity to model the strategy orally using the same word. Follow up with other words. Each time, have children tell you what they are going to do.
  3. Model how to use letter tiles that spell frog and touch a letter for each sound. Ask children to model the skill using letter tiles and touching a letter for each sound. Practise by using other words.

• **Alphabetical Awareness**
  Teach sounding out and blending strategies for decoding words.
  Pair children with a peer tutor who can help.
  1. Model how to sound out and blend a word (e.g., “I will point to each letter in set and say each sound.”). Point to each letter and say each sound without stopping (/s/e/t/). Say the word.
  2. After you model, give children the opportunity to model sounding out each letter while you move your finger along each corresponding letter. Then, let children blend the sounds to read the word. Repeat using words children can decode successfully.
Provide Scaffolding
Think about how to scaffold materials, tasks, and the amount of teacher assistance you provide.
– Sequence tasks systematically.
– Begin with continuous sounds, which are easier to pronounce than stop sounds.
– Move from larger units (e.g., sentences, words, onset-rimes) to smaller units (e.g., individual phonemes).
– Move from less complex (e.g., counting syllables) to more complex tasks (e.g., blending and segmenting).
– Use strategies to help children manipulate sounds (e.g., using concrete objects such as chips to represent sounds)(Adapted from Chard and Osborn, 1998, as cited in Chard and Dickson, 1999; Smith et al., 2001).

• Phoneme Awareness
Begin with big linguistic units.
1. Ask children to break sentences into words.
2. Ask them to break words into syllables by clapping.
3. Ask them to break words into phonemes. Begin with consonant-vowel-consonant (CVC) words.
4. Ask children first to identify only beginning sounds, followed by ending sounds, and finally medial sounds.
(Adapted from Coyne et al., 2001; Orton, 1976)

• Letter-Sound Relationships
1. Use a three-stage approach to teach letters and sounds that gradually increase in level of difficulty.
   – First exposure to a letter sound — Say, “Sun begins with the sound /s/. This is how we write the letter s”. Children print s and say name of object.
   – Second exposure — Say, “Show me something that starts with s”. Children make suggestions.
   – Third exposure — Say, “What sound does this object start with?” After children learn three or more sounds, repeat the activity and ask them to identify the letter sound that different objects start with.
3. Provide paper and pencil activities in sequence from least to most difficult (e.g., word matched to picture; words in short phrases; connected text; question and answer riddles).
4. Gradually move from teacher-directed to student-directed activities. First model saying the sounds in a word and touching underneath each letter.
Second, ask children to say each sound and touch each letter (or teacher touches each letter). Finally, point to the word and have children sound it out in their head (Adapted from Montessori teacher education; Orton, 1976).

• Phonics
1. Use lowercase letters to begin.
2. Introduce most frequently occurring consonants and vowels first (i.e., m, s, t, a, and i).
   Teach short vowel sounds early along with consonants.
3. Introduce easy sounds and letters first (e.g., m, s, and a are easier than l, x, and y).
   Introduce letters that are visually similar spaced apart (e.g., b, p, and d).
   Introduce letters with similar sounds spaced apart (e.g., b and d; e and i; f and v).
4. Introduce new letter-sound associations every two or three days.
5. Emphasize the common sounds of letters first (i.e., g for goat not g for germ).
6. Teach continuous sounds prior to stop sounds. Continuous sounds can be voiced for several seconds (e.g., m); stop sounds can be pronounced only for a moment (e.g., b).
7. Teach sound blending early.
   • VC and CVC words (e.g., at, man).
8. Introduce consonant blends.
   • CCVC (e.g., spit)
   • CVCC (e.g., sick)
9. Introduce consonant digraphs in both beginning and ending positions (e.g., fish, shell).
10. Introduce regular words prior to irregular ones. Teach irregular words as sight words; many are high frequency words.
11. Read connected text to reinforce phonics patterns immediately.
(Adapted from Montessori teacher education; Orton, 1976; Stewart and Cegelka, as cited in Lerner, 2000).

A final factor to consider is a question about which children receive what kind of instruction. A number of researchers favour a multi-tiered model of prevention (Bursuck et al., 2004). Coyne et al. (2001) recommend a three-stage system that increasingly intensifies intervention (i.e., intervention that is longer or more frequent, or provided by specialists) for children at risk and those with special needs. In Stage 1, the classroom teacher delivers the instructional program expecting that most children will make progress. Stage 1 instruction includes best practices in reading instruction (e.g., phonemic awareness, explicit and systematic phonics, vocabulary and comprehension, fluency) as recommended by the National Reading Panel (2000). In Stage 2, children who do not make adequate progress are moved to a more intensive level of intervention (e.g., small-group instruction). In Stage 3, children who fail to respond at this secondary level are moved to a higher level where they receive more intensive intervention (e.g., pullout program using a phonics-based approach). Implicit in the implementation of such a multi-tiered program is the need for teachers to use effective assessment strategies for making instructional decisions.

For the purpose of this paper, initially, all children receive core instruction in phonological and alphabetical awareness and then learners at risk are provided with more intensive instruction.

**Assessment**

Assessment tasks and tools that measure progress in phonemic awareness, letter knowledge, letter-sound relationships, decoding ability, and reading fluency are embedded in the Teacher Guide. The assessment tasks were developed and adapted from the DIBELS, and reflect critical areas of assessment identified by Kaminski and Good (1996, as cited in Abbott et al., 2002):

- Kindergarten and early grade 1 — initial sound fluency; letter recognition fluency; and oral phonemic segmentation.
- After children learn to read — efficiency in decoding and fluency.

There are some issues about phonological and alphabetic awareness assessment tasks that teachers need to consider. A child’s age, development, and exposure to literacy activities need to be taken into consideration when choosing phonological awareness tasks (Sodoro et al., 2002). Phonological awareness tasks decrease in their ability to provide accurate information by the end of grade 1 and through grade 2 (Schatschneider, Francis,
Foorman, Fletcher, and Mehta, 1999). For example, an onset-rhyming task is most appropriate for children who have just learned the skill. Most grade 2 students have acquired the skill even if they may have other phonological difficulties (Sodoro et al., 2002).

Response format and response type can influence a child’s performance on tasks (Sodoro et al., 2002). The format for a response can vary and children find some tasks more difficult than others. Response types vary in level of difficulty. Recognition tasks are usually easier to perform than production tasks (Sodoro et al., 2002).

Teachers need to decide whether to use real words or nonsense words (e.g., rav) to assess reading fluency. The idea of a nonsense word might confuse a child and subsequently affect performance. Using real words may work to better advantage (Fuchs, Fuchs, and Compton, 2004).

**Teacher Guide**

**Hints and Helps**

**Assessment**

Children differ in their need for phonological awareness instruction. Pre-testing helps assess who needs what kind of instruction.

- Use a variety of assessment tools to gather information for monitoring the progress of each child and for planning instruction to support learning.
- Use assessment to measure progress in phonemic awareness, letter knowledge, letter-sound relationships, decoding ability, and reading fluency. The assessment tools reflect research-based critical skills for beginning reading:
  - Kindergarten and early grade 1 — beginning sound fluency; letter recognition fluency; and oral phonemic segmentation
  - After children learn to read — efficiency in decoding words and reading fluency
- Alternatively, choose from a variety of assessment tools available commercially or create your own.
  - Use phonological awareness measures in kindergarten and early grade 1. Phonological awareness tasks decrease in ability to provide accurate information by the end of grade 1 and through grade 2.
  - Response format and response type can influence performance on tasks. The format for a response can vary (e.g., respond orally; clap out the phonemes in a word). Some children find some tasks more difficult than others.
  - Response types vary in level of difficulty. Asking someone to recognize a sound (e.g., Do sun and salad begin with the same sound?) is easier than asking to produce a response (e.g., Tell me a word that starts like sun.).
  - Use real words to assess reading fluency. The idea of a nonsense word (e.g., rav) might be confusing.

**Linking assessment with instruction in a continuous teaching/learning cycle**

The guiding principles of instructional design are woven into the strategies provided in the excerpts for the Teacher Guide. Attention to the instructional design principles improves the benefits of instruction to all learners but is especially significant for learners at risk. Careful attention will be paid to the following features in interventions for children at risk:
  - sequence tasks systematically and use clear instructional language;
• instruct explicitly to increase the overtness of strategies;
• use scaffolding of tasks, materials, and amount of teacher support (Smith et al., 2001).
The instructional strategies were adapted from a number of researchers (Abbott et al., 2002; Adams, 1990; Chard and Dickson, 1999; Lerner, 2000; Oudeans, 2003; Smith et al., 2001) and from the writer’s practice as a Montessori educator.

Kindergarten and Early Grade 1

Teacher Guide
Assessment
Kindergarten and Early Grade 1
At the kindergarten and early Grade 1 level, assess children for phonemic awareness, letter knowledge, and phonemic segmentation.

Phonological Awareness
Phonological awareness requires the ability to detect and manipulate speech sounds orally. Children use phonological awareness when they identify each word in a spoken sentence, separate syllables in words, make rhyming words, hear that different words start with the same sounds, or count the number of sounds in a word. Phonemic awareness, an aspect of phonological awareness, requires the ability to identify in sequence the individual sounds in a word. For example, sun is a word that is composed of three phonemes (i.e., /s/u/n). Children use phonemic awareness when blending, deleting, or moving individual phonemes within words or between words.

Phonics
Phonics is the association of sounds with written symbols. Alphabetic letter knowledge is linked with success in early reading.

Teaching Notes
1. Use Emergent and Early Literacy Skills Observation Checklist (Appendix 2, page 42) to record observations about a broad range of phonological and alphabetical awareness skills.
2. Use the following three measures of early literacy skills to measure progress in phonemic awareness and letter knowledge: beginning sound fluency, letter recognition fluency, and phonemic segmentation.
   • Administer a beginning sound fluency assessment task to monitor progress in ability to identify what sounds begin words. See Beginning Sound Fluency Assessment (Appendix 3, page 44) for suggestions. You may use Beginning Sound Checklist (Appendix 3, page 44) to record your observations. Alternatively, use Class Observation Record of Beginning, Ending, and Medial Sounds (Appendix 4, page 46).
   • Administer a letter recognition fluency assessment task to monitor progress in recognizing letters. See Letter Naming Fluency Assessment (Appendix 5, page 47) for suggestions. You may use Letter Naming Checklist (Appendix 5, page 47) to record your observations.
   • Administer a phonemic segmentation assessment task to monitor progress in orally segmenting phonemes in consonant-vowel-consonant words. See Phonemic Segmentation Assessment (Appendix 6, page 49) for suggestions. You may use Phonemic Segmentation Checklist (Appendix 6, page 49) to record observations. If you find that kindergarten students have not reached readiness for segmenting words into phonemes, wait until children begin to demonstrate the skill before assessing.
3. Take a baseline measure of performance. Divide the children into low, medium, or high groups according to their level of performance on each indicator. Continue to measure performance on a monthly basis to determine progress. Measure progress more frequently for children at risk.
4. Use the information that assessment provides to plan interventions for children who are performing very poorly, not progressing, or are experiencing difficulties.

Teachers use the information that assessment provides to plan interventions that target deficit skills. An example of intervention is provided for children who struggle with each of auditory phonemic detection and phoneme segmentation. Note that early reading instruction for children at risk is integrated with other rich literacy experiences (Adams, 1990; Coyne et al., 2001; Lyon, 1998, Stanovich, 1994, as cited in Dickson and Bursuck, 1999).

For children with low segmentation skills, research evidence indicates that integrating letter-sounds with phonological skills such as blending and segmenting is critical (Chard and Dickson, 1999). Oudeans (2003) investigated the optimal sequence for making explicit connections between print (i.e., letter-sound correspondences) and speech (i.e., blending and segmenting phonemes) for kindergarten students with low phonological awareness. Oudeans found that the parallel-integrated (PI) sequence was more effective than a parallel-nonintegrated sequence in improving the performance of children with a low ability to segment phonemes, although both instructional sequences helped children achieve segmentation goals. Children exposed to the PI sequence showed greater improvements in letter-sound fluency and performed higher in word reading.

“A parallel integrated order refers to a sequence in which two sets of activities are taught within the same training session, and the sets of activities are integrated and linked systematically with each other to establish explicit connections between activities” (Oudeans, 2003, p. 261). For example, phonological awareness and letter-sound relationships are taught during the same lesson (e.g., the letter name and sound for /s/ is taught as well as the auditory skills of blending and segmenting. Conversely in a parallel non-integrated sequence although the activities are the same, letter-sound activities are taught separately from phonological awareness activities of segmenting and blending. Oudeans’ findings suggest that making connections explicit between letter sounds and phonological skills helps children map letters to sounds and subsequently blend sounds together to read words. Oudeans recommends that kindergarten teachers consider providing a 15-minute instructional period beginning in January that explicitly makes those connections.

Teacher Guide
Meeting Individual Needs
Integrating Assessment with Intervention
Interventions for Improving Auditory Phonemic Awareness
Teaching Notes
Use the results of assessment to plan interventions for children who struggle with phonemic awareness of beginning sounds in words.

Before
1. Continue to incorporate phonemic awareness lessons into classroom literacy activities. Invite children to participate in whole class shared readings of a text several times a week. After the shared reading, tell children to join their groups. Limit group size for children at risk to three when providing direct instruction. Provide each group with 15-20 minutes of instruction time while other children are engaged in learning centre activities. You might meet with low-performing children more frequently than high-performing children.
2. Use the following strategies to improve auditory phonemic awareness. Select target sounds from context. Present a short poem or chant that helps children get a sense of patterns in rhymes and songs (e.g., the teacher does a shared reading of a poem that targets the sound /s/). Children listen to the lyrics on tape before singing the song.

Example: *Sister Sassy*

*Sits on a stool,*

*And sings silly songs*

*About nursery school.*

3. Present the target sound in a three-stage lesson.
   a) Hold up a model of the sun. Say, “The first sound in *sun* is /s/.”
   b) Show me other things that start with /s/.
   c) What sound does this object start with?

4. Compare and contrast target sounds in alliteration or rhymes (e.g., “What words in the poem start like *Sassy*?”)

5. Provide developmentally appropriate instruction.
   – match sound to small objects (e.g., Which objects begin with the /s/ sound?)
   – match sound to pictures (e.g., Which pictures begin with the /s/ sound?)
   – match sound to words (e.g., *sun, Sally*. Do they start with the same or different sound?)
   – recognize rhyming words (e.g., *sun, fun*)
   – count phonemes (e.g., *Sun* has 3 phonemes.)
   – blend and segment phonemes (e.g., blend — /s/u/n/ to *sun*; segment and tap out phonemes — say each sound in a word such as /s/.../o/.../ck/ for sock)

**Note:** May be more suitable for children performing at higher levels of phonemic awareness.

6. Combine blending and segmenting phonemes in words without using print.
   • Invite children to say a word slowly (e.g., stretch out the sounds).
   • Invite them to say it fast (e.g., put it together).

7. Review sounds learned earlier.

**After**

8. Provide multiple opportunities for practice. See *Literacy Activities* (Appendix 7, pages 51–55) for practice activities that combine phonemic awareness with letter-sound correspondence. The series of four activities progresses as follows:
   • Phonemic Awareness — circle objects that begin with the sound /s/
   • Letter-recognition — practise printing the letter /s/
   • Letter-sound relationship — identify objects that begin with the sound /s/ and print the letter /s/
   • Letter-sound relationship — draw objects that begin with the /s/ sound and use invented spelling to label pictures. Invite family members to help.

9. As you continue to observe, note children who are/are not making progress.

For children who are not making progress, note particular strengths and weaknesses and determine what they need to learn next. If there is no change in growth for a low performing child, collaborate with colleagues and/or consult with a specialist.

**Interventions for Improving Segmentation Skills**

**Teaching Notes**

Use the results of assessment to plan interventions for children who struggle with segmenting phonemes in words.

**Before**

1. In advance, prepare sets of words using a CVC pattern for the target sounds. Use only two words with a phoneme in the same position (e.g., *sat, sip*) to reduce guessing.
2. Use a variety of instructional materials to scaffold blending and segmenting words:
   • Use a picture or small object to represent each word.
   • Use the target word in a sentence to provide context (e.g., *I am* happy.)
• Use the terms “stretch it out” for segmenting and “put it together” for blending activities.
• Invite children to move a chip on a three-square template to represent each phoneme.

During
3. Use strategies that integrate letter-sound correspondence with segmenting phonemes to help children with low segmentation skills. Make explicit connections between print and speech.
• Select target sounds (e.g., /n/, /s/, /u/).
• Give the child a card with the letter s on it and two blank cards.
• Point to the letter s. Say, “The name of this letter is s. The sound for this letter is /sss/.
Listen to the sounds in the word sun.” Point to the card for s as you say the beginning sound in sun. As you point to the blank cards, say the sounds for the medial and final sound in sun. Then point to the card with s and say, “/Sss/uuu/n/ begins with the letter s. The first sound in /sss/uuu/n is /s/.
• Direct the child to point or move the cards as you repeat the script together.

4. Introduce a new letter name and sound every few days and review the ones introduced earlier, in the lessons that follow.
5. As children build their knowledge of letter-sounds, model the activity using blank cards only for unfamiliar letter-sounds (e.g., tub).
• Give the child a card with the letter u on it and two blank cards.
• Point to the letter u. Say, “The name of this letter is u. The sound for this letter is /uuu/.
Listen to the sounds in the word tub.” Point to the blank card as you say the first phoneme. Point to the card that says u as you say the /uuu/ sound in tub and point to the blank card for the final sound /b/.
Then point to each card in the sequence and say, “The first sound in /ttt/uuu/b/ is /t/. The middle sound in /ttt/uuu/b/ is /uuu/. The last sound in /ttt/uuu/b/ is /b/.
• Direct the child to point to the cards as you repeat the script together.
• When the child knows all the sounds for a word (i.e., after several explicit lessons) print the whole word on a card. Direct the child to stretch out the sounds in the word slowly as you move a finger or a chip under each letter. After children practise segmenting the sounds, ask them to put the sounds together and say the word fast (Adapted from Oudeans, 2003).
• Direct the child to point to the cards as he/she repeats the script.

After
6. Provide multiple opportunities for practice.
• Play a game to reinforce blending and segmenting skills.
7. Invite family members to help. The letter to family (Appendix 8, page 56) invites them to play two games with their child.
8. As you continue to observe, note children who are/are not making progress.
For children who are making progress, note particular strengths and weaknesses and determine what they need to learn next. If there is no change in growth for a low performing child, collaborate with colleagues and/or consult with a specialist.

An important aspect of teaching involves communicating with the family. A letter can be sent home that explains in plain language what children are learning in early literacy and provide suggestions for how family members can offer support. Applying literacy skills at home reinforces learning and helps children be successful.

Teacher Guide
Family Connection
The letter to family may be sent home. This letter explains how family members can help children practise blending and segmenting words.
For some children, these skills will be easy to acquire; for others, repetition is crucial.
Applying these skills at home intensifies the learning and helps children experience success.
Mid Grade 1 and beyond

Teacher Guide
Assessment
Mid Grade 1 and beyond
Assess decoding efficiency and reading fluency and accuracy, in addition to letter knowledge and phonemic segmentation. See Kindergarten and early grade 1 for teaching notes about letter knowledge and phonemic segmentation.

Teaching Notes
1. Continue to use Emergent and Early Literacy Skills Observation Checklist (Appendix 2, page 42) to record observations about a broad range of phonological and alphabetical awareness skills.
2. Use the following two measures of literacy skills to measure progress in decoding and reading accuracy and fluency.
   • Administer a word fluency assessment task to monitor progress in ability to decode words each with three phonemes. See Word Fluency Assessment (Appendix 9, page 58) for suggestions. You may use Word Fluency Checklist (Appendix 9, page 58) to record your observations.
   • Administer an oral reading assessment task to monitor progress in reading accurately and fluently. See Oral Reading Assessment (Appendix 10, page 60) for suggestions. You may use Oral Reading Recording Sheet (Appendix 10, page 60) to conduct a running record.
3. Take a baseline measure of performance. Divide the children into low, medium, or high groups according to their level of performance on each indicator. Continue to measure performance on a monthly basis to determine progress. Measure progress more frequently for children at risk.
4. Use the information that assessment provides to plan interventions for children who are performing very poorly, not progressing, or are experiencing difficulties.

Teachers use the information that assessment provides to plan interventions that target deficit skills. An example of intervention is provided for children who struggle with fluency.

Chard et al. (2002) synthesized the research about interventions for building fluency, and found that repeated readings of target passages or word lists for children with learning disabilities are associated with improvements in reading speed, accuracy, and comprehension (National Reading Panel, 2000). Repeated reading with a model (i.e., teacher models reading text aloud to children) seems more effective than repeated reading with no model especially for children with low fluency (Rose and Beattie, 1986, as cited in Chard et al., 2002). Teacher modeling was more effective than tape- or computer modeling, which in turn was more effective than no modeling (Rose and Beattie). Note that there is little evidence that silent reading builds fluency (Chard et al., 1998, as cited in Chard et al., 2002). Using grouping practices in which effective readers coach less able readers is another effective way to build fluency (Chard et al., 2002; Fuchs, Fuchs, McMaster, et al., 2004). Providing struggling children with text chunked in words or phrases is another approach to improving fluency (Young and Bowers, 1995, as cited in Chard et al., 2002).
Interventions for Improving Fluency

Teaching Notes
Use the results of assessment to plan interventions for children who struggle with fluency.

**During**
1. Doing repeated readings of target passages or word lists improves reading speed, accuracy, and understanding.
2. Provide multiple opportunities for children to practise repeated readings with a model.
   - Teacher/peer/adult tutor reads aloud. Child rereads same text. Although tape- or computer modeling is less effective, it is more effective than no modeling.
   - Use small groups to practise reading.
3. Provide developmentally appropriate instruction.
   - Initially, provide text chunked in words or phrases on cards.
   - Introduce progressively more difficult text.
   - Provide corrective feedback.

**After**
4. As you continue to observe, note children who are not making progress.
   For children who are not making progress, note particular strengths and weaknesses and determine what they need to learn next. If there is no change in growth for a low performing child, collaborate with colleagues and/or consult with a specialist.

Peer tutoring and small group interventions can be effective. Small group intervention can be as effective as one on one when teachers are well trained to provide intervention with appropriate intensity, duration, skill, and support (Foorman and Moats, 2004). Slavin (1994, as cited in Chard and Kame'enui, 2000) recommend that group size for children at risk should be limited to three. Kamps et al. (2003) found that small group instruction provided two to three times the number of opportunities for children to engage in critical reading behaviours. These findings concur with Coleman and Vaughn (2000, as cited in Kamps et al., 2003) who also found significant effects for using interventions such as peer tutoring for children at risk.

Fuchs, Fuchs, McMaster et al. (2004) describe a peer approach called First Grade PALS. The higher performing child (coach) models the literacy activity before the lower performing child completes the activity. The coach provides prompts and corrective feedback. A peer approach can work well when teachers select coaches capable of reading the lessons independently and working with a lower performing child. Teachers can modify a peer tutoring activity by introducing an appropriate number of sounds or words that match the lower performing child’s skill level.

An alternative is to provide tutoring by trained adults, in which the tutoring roles are not reciprocal (Fuchs, Fuchs, McMaster et al., 2004). Tutors can work toward mastery of a skill before moving on and spend more time on activities that a student finds difficult.
Fuchs et al. found that tutoring provided by trained adults was significantly more effective for the most difficult-to-teach children than peer tutoring.

**Teacher Guide**

**Hints and Helps**

**Using Peer and Adult Tutors**

**Peer Tutor**
Pair a child who is experiencing difficulty with a peer who can help. In advance, provide training to peer tutors by teaching them how to model skills (i.e., tutor models the sounds/letters/words first before the child practices them) and how to be an effective coach (i.e., provide prompts and corrective feedback and praise). When reading text, tell the peer tutor to read the text first before the child reads the same text. When the partners finish, have them switch roles and take turns reading the text several more times.

**Adult Tutor**
Consider training an adult volunteer to help children who experience significant difficulties. Adult volunteers can help a child master a skill (e.g., a set of CVC words) before moving on to the next skill, and spend more time on specific skills that a child finds difficult.

**Conclusion**

Research has been instrumental in helping teachers understand the importance of phonological awareness and phonics in learning to read. Becoming literate is complicated but literacy can be achieved by immersing children in a literacy-rich environment and providing effective phonological and phonics instruction informed by ongoing assessment.

Assessment is important to provide timely and early intervention for all children and each child at risk for reading difficulties. In a teaching/learning cycle, teachers conduct ongoing assessment of critical skills in beginning reading, namely, phonemic awareness (i.e., beginning sound and segmentation), letter knowledge, letter-sound relationships, decoding ability, and reading fluency to monitor progress in literacy. Analysis of assessment provides the information a teacher needs to plan appropriate interventions.

Teachers use their considerable skills to determine effective interventions and strategies for children at risk by providing explicit and direct instruction, teaching strategies, scaffolding learning to provide the level of support each child needs, and using small groups and peer/adult tutoring to teach phonological and alphabetical awareness skills. By attending to important features of instructional design for children at risk, teachers strengthen the benefits of intervention for these children and enable many to become successful readers.

**Final comment**

A limitation of the paper is its inability to fully represent the idea that teachers need to avoid a technical view of literacy learning in which phonological awareness is taught out
of context and in isolation. Instead, literacy teaching and assessment needs to reflect the full range of interrelated and connected literacy skills.

More research is needed on how effective teachers assess developing reading skills in their classrooms. Researchers should keep in mind that “good assessment rests on good theory, not just a theory of reading but of effective teaching and development” (Paris and Hoffman, 2004, p. 215).


Coyne, M.D., Kame'enui, E.J., & Simmons, D.C. (2001). Prevention and intervention in


Jersey: Lawrence Erlbaum Associates.


Appendix 1

Informal Measures for Phonological Awareness

Pre-kindergarten
An informal assessment tool about concepts of print and phonemic awareness that takes only a few minutes to complete can be obtained at www.getreadytoread.org. It was developed by the National Center of Learning Disabilities in 2001.

Kindergarten and Beyond
• Yopp-Singer Test of Phonemic Segmentation — Used to measure the segmentation of words, it can be obtained in The Reading Teacher, Vol. 49, 1995.
• DIBELS — Good and Kaminski (2002) provide well-researched measures called the Dynamic Indicators of Basic Early Literacy Skills (DIBELS), which can be used to monitor the development of pre-reading and early reading skills. They can be accessed at http://dibels.uoregon.edu.

Dynamic Indicators of Basic Early Literacy Skills

<table>
<thead>
<tr>
<th>Name</th>
<th>Purpose</th>
<th>When to use it</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Sound Fluency</td>
<td>• Assess ability to identify what sounds begin words</td>
<td>• Through preschool to middle of kindergarten</td>
<td>• Student is asked to identify a word that begins with a target sound from an array of four pictures (e.g., “This is a sock, cat, mitten, and hat. Which one begins with /s/?). Student points to the correct picture. Student is also asked to orally produce the beginning sound for an orally presented word that matches one of the given pictures. Response time is recorded. The number of correctly identified onsets in 1 minute is the score.</td>
</tr>
<tr>
<td>Letter Naming Fluency</td>
<td>• Assess fluency in identifying letter names</td>
<td>• Beginning of kindergarten through fall of grade 1</td>
<td>• Student is asked to name as many letters as possible from a list of randomly ordered upper and lower case letters in 1 minute. The total number of letters identified correctly is the score.</td>
</tr>
<tr>
<td>Phoneme Segmentation Fluency</td>
<td>• Assess ability to segment one-syllable words (does not assess blending).</td>
<td>• Middle of kindergarten to end of grade 1</td>
<td>• Student orally produces individual phonemes for words of three to four phonemes presented over the course of 1 minute (e.g., “sat” — student says, “/s/.../a/.../t/”).</td>
</tr>
<tr>
<td>Test Type</td>
<td>Description</td>
<td>Administration</td>
<td>Scoring</td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Nonsense Word Fluency</td>
<td>• Assess ability to read or decode nonsense words.</td>
<td>• Middle to end of kindergarten through the beginning of grade 2. May be appropriate for monitoring progress of older children with low skills in letter-sound correspondence.</td>
<td>• Student says the sounds of the letters or says the entire nonsense word. The number of phonemes read correctly as single sounds or as whole words in 1 minute is the score.</td>
</tr>
<tr>
<td>Oral Reading Fluency</td>
<td>• Assesses ability to read fluently and accurately.</td>
<td>• Middle of grade 1 through grade 3.</td>
<td>• Student reads aloud a passage drawn from high-frequency words for 1 minute. Words omitted, substituted, and hesitations of more than three seconds are scored as errors. Words self-corrected within three seconds are scored as accurate. The number of words read correctly is the oral reading fluency rate.</td>
</tr>
</tbody>
</table>

(Good and Kaminski, 2002; Kame’enui, Simmons, and Cornachione, 2001; Sodoro, Allinder, and Rankin-Erickson, 2002)