Foundations for Literacy:

An Evidence-based Toolkit for the Effective Reading and Writing Teacher

Réseau canadien de recherche sur le langage et l'alphabétisation
CANADIAN LANGUAGE & LITERACY RESEARCH NETWORK
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Introduction

The aim of this resource is to provide teachers with a review of recent findings from well-designed research studies on the teaching of reading and writing. This kit can be used as a reference tool in daily practice. Teachers may already be familiar with some of the research findings presented here, but this resource can supplement and enhance their knowledge. Staying informed on the latest developments in reading and writing is not an easy task, given all of the teacher's commitments. The goal is to encourage teachers to continue to be research-informed. This kit is designed to review what is known about development of reading and writing skills, to identify what needs to be taught, and how it can be taught to ensure that all children succeed.

This kit does not cover all the grades discussed in great detail (Kindergarten through Grade 6). In addition, it does not cover specific curricula as the requirements vary from one province to another. Instead, this resource highlights the best research knowledge in reading and writing development. This knowledge will positively affect teaching practices in reading and writing across the country. The information presented here is explained and integrated with examples on how to bring evidence into classroom practice. In addition, the kit provides access to useful related resources.

The preferred use of the kit would be to include it as a complement to a comprehensive course in reading and writing instruction in faculties of education in Canada. The kit is divided into sections that provide the flexibility to select specific parts appropriate for differing university curricula. Moreover, this kit can be a valuable resource for practicing teachers both as part of professional development training courses and as a reference tool.

Teachers have the power to make literacy education exciting and fun, while at the same time increasing its effectiveness by integrating evidence-based teaching practices (National Strategy for Early Literacy, 2008).

Check our companion website or DVD-ROM for the link.

"It is not just that the teaching of reading is more important than ever before, but that it must be taught better and more broadly than ever before. We are witnessing an explosion in both information and technology. Alongside, the social and economic values of reading and writing are multiplying in both number and importance as never before."

(Marilyn Jager Adams, 1990)

What you will find in this kit

The print resource is divided into three major sections. The first covers what a teacher needs to know about types of research in order to keep informed and knowledgeable about language as it relates to reading and writing instruction. The second section covers the child's development of reading and writing skills and provides practical classroom examples of activities to teach these skills. The third section covers effective instruction techniques.

At the end of these three sections, a list of references is provided along with an extensive glossary of terms used in literacy instruction. This is followed by a province-by-province listing of various library services available to alumni of faculties of education at Canadian universities.

This print resource refers to additional material on the accompanying DVD-ROM and the companion website. The DVD-ROM includes a PowerPoint presentation on the ideas presented in the kit, along with video clips of classroom demonstrations illustrating effective techniques and interviews with expert Canadian researchers about recent research findings. The companion website can be accessed through the Resources link on the Canadian Language and Literacy Research Network's (CLLRNet) website (http://www.cllrnet.ca/). The website includes downloadable print materials, multimedia components, hyperlinks to online resources, a glossary of terms, and charts of key supporting resources.

The companion website for this kit can be accessed at http://foundationsforliteracy.ca

How the print resource is organized

The first section begins with part of a K-W-L chart (the "What do I know" and the "What do I want to learn") with suggested questions for teachers. The purpose of this chart is to help teachers organize their thoughts. At the end of each of the three sections is a "Things I have learned" box that teachers can use to record what they have learned. At the end of the print resource, teachers can reflect on how the information from this resource can be used in their practice by answering the questions of "What am I going to do next?" and "How will I apply this knowledge in a classroom?"

The second section on reading and writing development covers not only the reading skills studied by the National Reading Panel (2000) (i.e., phonemic awareness, phonics, vocabulary, reading comprehension, and fluency) but also print awareness, letter knowledge, and writing. The graphic "Framework A" from SEDL (formerly the Southwest Educational Development Laboratory, 2008) is presented as a reference for understanding the building of literacy skills. Each subsection within the model of reading development and writing section begins with a definition of the skill, followed by the evidence (i.e., research findings), examples of instructional techniques based on that evidence, and assessment examples for each skill.

Icons indicating sections such as "case study", "evidence" and "instruction tips for teaching" also stand out on the page for ease of navigation and quick reference. Pop-out margin notes provide extra information on a topic or lead the reader to supporting resources on the DVD-ROM or website.

The importance of teaching reading and writing

The foundation of language and literacy skills is laid in early childhood. Early learning situations are critical to lifelong development. Teachers are undertaking a challenging and exciting role in establishing these skills. For example, in any given classroom, teachers may be faced with 25 students, each with their own strengths and challenges. These are students whom they are expected to enrich, educate, and inspire. Some students will be grade levels ahead of their classmates, while others will not be as prepared for school due to lack of experience at home. Some will have cognitive and behavioural challenges while others may not speak English well (if at all).

Canadian researcher Willms (2002) notes that 28 percent of Canadian 6-year-olds have cognitive or behavioural problems, which make them unprepared for the challenges of Grade 1. When students have cognitive and behavioural problems, it may be more challenging for them to learn how to read and write. Much evidence shows that with effective instruction from the beginning, most reading problems can be prevented and "all children can learn to read" (Mathes & Torgeson, 1998). What becomes apparent in studies on effective reading interventions is the importance of identifying risk factors early (Fletcher & Foorman, 1994).

There are huge economic savings to society when the teaching of reading is guided by scientific evidence. According to a Statistics Canada study by Coulombe, Tremblay, & Marchand (2004), a 1 percent increase in literacy (relative to other countries) produces a 2.5 percent increase in the level of labour productivity and a 1.5 percent rise in the Gross Domestic Product (GDP) per person. In Canada, this equates to an increase of $32 billion in national income for every 1 percent increase in literacy scores.

Therefore, teaching children to read and write using effective instruction is of tremendous importance to society. Teachers have a significant role to play.

"Given the pivotal role reading plays in and out of school and the cumulative long-term cost of illiteracy, early literacy intervention is critical."

(Al Otaiba & Fuchs, 2002)

Exploding reading myths

Parents, teachers, students, and society in general, may be heard repeating myths they have encountered related to the acquisition of reading skills such as those listed below. Many of these myths, which are not based on scientific research, have been passed on and continue to be prevalent in homes and classrooms. No matter what the source of the myths, students deserve research-based teaching practices that have been proven to work. Included below are research findings that explode some common myths.

MYTH 1: Learning to read, like learning to talk, is a natural process.

Reading was once thought to develop naturally, when a child was mature enough (Twyman, 2007).

Response from research: Findings from decades of research challenge the belief that children learn to read naturally (Lyon, 1998). While oral language develops naturally from birth, and exposure to native speakers' language is sufficient to trigger language acquisition in infants, literacy is not acquired in the same fashion. Reading is a cultural adaptation that must be learned.

MYTH 2: With time, all children will eventually learn to read.

Children who do not learn to read in the primary grades may be overlooked due to the belief that they will learn in time.

Response from research: Since reading is not biologically innate in the same way that oral language is, it is unlikely that all children will learn to read without the proper instruction. Over time, the achievement gap becomes wider between children who have well-developed literacy skills and those who do not (Wren, 2002a). Rather than waiting for a child to catch on to reading, real progress can be made with intervention and tutoring that promote decoding skills (Pressley, 2006).

MYTH 3: Genetics rule: if the child has dyslexia, he or she cannot be helped.

It has been argued that when disparity exists between intelligence and reading skills, the person should be categorized as having "dyslexia". This term became overused as a catch-all description for those who failed to learn to read despite a normal intellectual capacity (Wren, 2002a).

Response from research: Although dyslexia, a language-based learning disability that originates with poor phonological skills, is influenced by genetics, most children with dyslexia can learn to read. Genetic and environmental factors have about

equal influence on reading achievement at all levels of reading ability (Fletcher, Lyon, Fuchs, & Barnes, 2007; Olson, 2006). Early intervention and code-based, systematic and comprehensive instruction enable most individuals with dyslexia to achieve satisfactory reading levels. However, spelling and fluency will likely continue to be difficult for children with dyslexia.

MYTH 4: If you start at a disadvantage, you will never catch up.

It is clear that each child will come to school with different exposures to books, print, and stories. Some may believe that nothing can be done for a child who is behind in reading and writing skills.

Response from research: Many students may enter Kindergarten at risk for reading failure due to lack of exposure to, or experience with, print, books, and stories. Research demonstrates that children in supportive classrooms with effective instruction make academic gains. Studies indicate that at-risk students who have skilled literacy teachers for two years in a row are very likely to become strong readers (Snow, Burns, & Griffin, 1998).

MYTH 5: After Grade 3, children are done learning how to read.

Some people believe that specific instruction in reading skills is not needed after Grade 3 and that children have all the skills they need to become successful readers.

Response from research: Not every aspect of reading can be taught or learned before a child completes Grade 3. Most children have not yet mastered decoding by the end of Grade 3; therefore they will need further instruction in vocabulary development, comprehension, and fluency (Pressley, 2006).

MYTH 6: Children can learn to read by relying heavily on context cues.

Oral story telling should not be confused with reading ability. This is often the case when a child uses pictures to retell a story effectively.

Response from research: It has been shown that context can facilitate comprehension after words have been read (Phillips, Norris, & Vavra, 2007); however, it is not useful as an initial decoding strategy. When children encounter a word they have not seen before, they need to use decoding skills to sound it out.

MYTH 7: Students can master reading comprehension if they just read, read, and read.

The notion exists that reading comprehension is learned independently and achieved by simply placing a book in a child's hands, encouraging them to read, and then read more.

Response from research: There is substantial evidence showing that if students are explicitly taught effective reading comprehension strategies they will become much better at comprehension than those who are not taught to use these strategies (Pressley, 2006).

MYTH 8: English has so many irregular spellings and inconsistencies that it is impossible to teach.

Many believe that teaching decoding, spelling, and writing is difficult because there are no clear language patterns.

Response from research: For reading and writing purposes, English is 80 percent regular (Bowey, 2006). The continuum of learning the patterns in English begins with the basic Anglo-Saxon words (i.e., common words such as bump, get, right) and expands to prefixes, suffixes and Latin and Greek roots from Grade 3 or 4 onwards (Henry, 2003). This continuum presents the student with logical patterns. The teacher must be knowledgeable about language in order to present these patterns clearly.

SUMMARY

The goal of this kit is to prevent the perpetuation of these myths; this is accomplished through a review of recent and well-designed research findings on the teaching of reading and writing. The research examined and explained throughout the kit is multidisciplinary; it comes from the fields of education, psychology, neuroscience, and speech-language pathology. Teachers can draw implications for their classroom practice from this kit.

Getting Ready

This section explores the levels of research and gives an overview of the language knowledge teachers will need for effective reading and writing instruction. Examples of how teachers can apply this knowledge in the classroom are also provided. As a starting point, think about the following question:

What do I know about effective reading and writing instruction?

This includes thinking about the process of reading development, the acquisition of reading and the assessment of progress. It also includes thinking about what works or does not work in practice. The questions provided in the following chart can help teachers focus on what they already know and what they want to learn from this kit.

Effective reading and writing instruction K-W chart

What do you know about effective reading and writing instruction? Reflect and write down what you know and what you would like to know about teaching reading and writing.

What Do I Know?	What Do I Want to Learn?
How do children learn to read?	
Why do some students struggle?	
What are some structures of English language?	
Which teaching methods work in reading instruction?	
What are recent research findings about what works?	
How does one engage and motivate students?	

Becoming an informed consumer of research knowledge

You want to make sure you choose the right methods and content for your class and you want to engage your students in learning. You have so many "idea-workbooks" for teachers and so little time in the busy day that you do not know where to start. You also know that the "one size fits all" workbooks have not always worked for your students.

You contemplate going down the hall to chat with other teachers, but decide to save that for tomorrow in the staff room.

Now where to go?

Try research-based recommendations. There are a great number of articles that explain what has been proven to work for hundreds, even thousands, of students. The likelihood of research-based teaching methods working for you is high, so try them out.

Read ahead for many great ideas.

Keeping up to date with research

Having a good foundation of knowledge and keeping up to date with recent research is critical within the practice of teaching. It is important to choose instruction techniques that the highest levels of research have shown to be successful, and to know when and how to intervene to give a student additional assistance. The following is a guide on how to make informed choices, using reliable research.

The highest levels of research incorporate results from many studies (meta-analyses), are completed on thousands of children (large sample sizes), and often are continued over long periods of time (longitudinal studies). Such well-designed studies adhere strictly to rules that control for subjectivity and bias. They are based on experimental designs that allow comparisons. Strong conclusions are possible only after data from a large number of studies has been collected and compared.

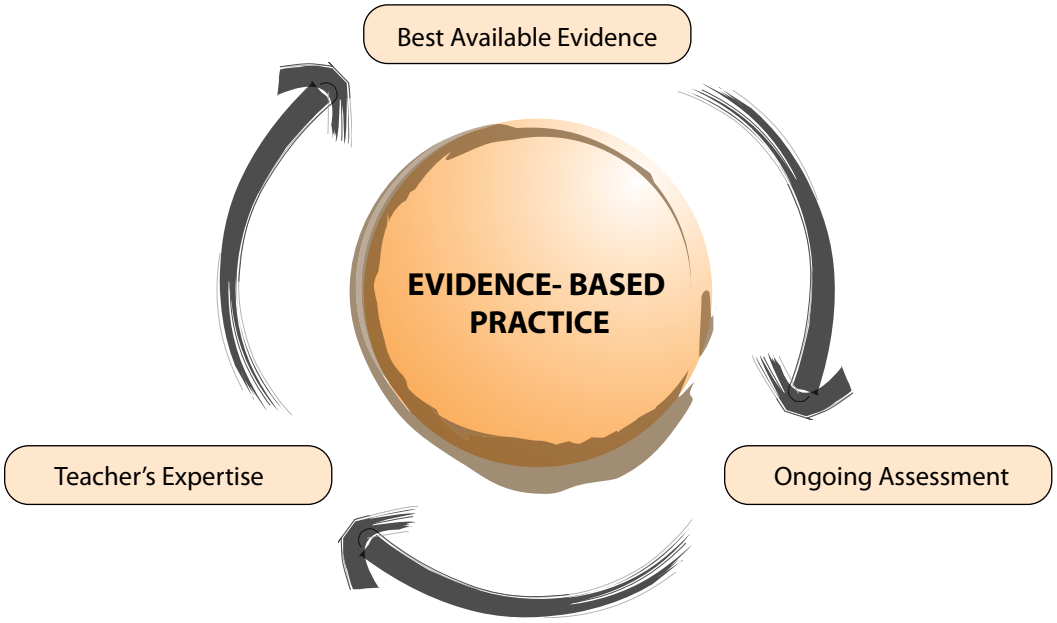
Read the article "What if research really mattered?" (Ravitch, 1998) to start thinking about the importance of research in education.

Go to our accompanying website or DVD-ROM for a direct link.

Evidence-based practice

Evidence-based practice in teaching involves taking relevant information from research findings and implementing it in the classroom.

The flowchart below demonstrates how evidence-based practice in teaching is a continuous, cyclical process. The three interactive elements are: (1) information of the highest quality from the available scientific evidence; (2) the assessment of a particular student's needs; and (3) the teacher's own expertise. As new evidence is found and new students are assessed, teaching practices must be reevaluated and adjusted accordingly. It is important to keep up to date with the new research in order to provide students with current and effective reading instruction. There is no single method or single combination of methods that can successfully teach all children to read (International Reading Association Statements, 2006).



(Adapted from LinguiSystems, 2006)

Recognizing good research

It is essential to critically evaluate research by looking for signs of bias, as well as searching for comparisons and duplications of results. The chart below ranks study designs based on their ability to protect against bias (i.e., whether they are objective) and they are ranked from the strongest level (Level 1) to the weakest level (Level 4). When attempting to select valid research to inform practice, teachers should look for studies that are well designed and not biased. The studies relevant to teaching children how to read and write are conducted not only by education specialists, but also by specialists in areas such as psychology, neuroscience, and learning disabilities. The evidence presented in this resource kit does not discuss specific reading programs, but rather focuses on effective instruction methods that can be used to teach students how to read.

Go to our accompanying DVD-ROM or website to watch a video on why evidence is important in developing reading programs.

[Video 1]

Levels of research

Level of Evidence	Types of Studies	Characteristics
Level 1 (the strongest) Level 1a	– meta-analysis of randomized controlled trials – systematic review – single randomized, controlled trial	– well-designed – control of bias – examines many studies (large sample size) – conclusions that are based on statistical analysis – conclusions that are significant
Level 2 Level 2a	– controlled study without randomization – quasi-experimental study	– control for bias – single study – well-designed
Level 3	– case studies – survey research – observational research – archival research	– well-designed – non-experimental – qualitative description – useful at early stages of investigation (Stanovich & Stanovich, 2003)
Level 4 (the weakest)	– expert committee reports – consensus statements – experience of respected authorities	– lacks comparative information – fails to test an alternative – rules nothing out – in some cases, expert opinion can be important

(Adapted from LinguiSystems, 2006)

Key sources of evidence-based research

A vast amount of research has been completed on methods of reading instruction and new research is being published all the time. There are good sources available on the Internet. Many will be referred to in the modules that follow. Some main sources are listed below.

It is interesting to find that Canadian organizations are notably missing from the list below and this is because there are few research and research dissemination organizations in Canada equivalent to those listed. Please note that studies of many Canadian researchers are cited throughout the text of this kit. We are not singling out any provincial research because this resource is not specific to any one province.

Canadian Language and Literacy Research Network (CLLRNet)
http://www.cllrnet.ca

CLLRNet's ongoing Encyclopedia of Language and Literacy Development and its other knowledge initiatives provide free online access to research-based information on how children acquire language and literacy.

Education Resources Information Centre (ERIC database)
http://www.eric.ed.gov

ERIC provides access to more than 1.2 million bibliographic records of journal articles and, if available, links to full text. ERIC Digests of Research are available up until 2003 from the ERIC Clearinghouse http://www.ericdigests.org/. The ERIC Clearinghouse was discontinued in 2003, and subsequent Digests are mixed into the ERIC database.

Florida Center for Reading Research (FCRR)
http://www.fcrr.org/

Part of FCRR's mission is to conduct scientific research on reading, reading assessment, and reading instruction. FCRR aims to disseminate information on research-based instruction and assessment practices and to thereby benefit students learning to read. The FCRR website reports on research findings, provides examples of practical student activities, and suggests intervention programs for struggling readers.

National Reading Panel (2000)
http://www.nichd.nih.gov/publications/nrp/upload/report_pdf.pdf

The National Reading Panel, a major initiative of the U.S. Congress, conducted a number of meta-analyses to assess the status of research-based knowledge, including the effectiveness of various approaches to teaching children to read. This document reports on the findings from the meta-analysis.

The main report is entitled "Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction."

The findings of the National Reading Panel are also summarized in an accessible document designed by teachers: Armbruster, B. B., Lehr, F., & Osborn, J. (2003). Put reading first: The research building blocks for teaching children to read (2nd ed.) Washington, DC: National Institute for Literacy (NIFL). http://www.nifl.gov/nifl/publications.html .

SEDL (formerly Southwest Educational Development Laboratory)
http://www.sedl.org/reading/

SEDL aims to improve teaching and learning through research, development, and dissemination. The SEDL website includes: useful research-based readings; a model of the cognitive framework, which clearly lays out the stages of development in reading; and links to sources with activities.

What Works Clearinghouse (WWC)
http://ies.ed.gov/ncee/wwc/

This resource from the U.S. Department of Education's Institute of Education Sciences provides summaries of scientifically based studies. The WWC's reviews focus on reading interventions for students in Kindergarten to Grade 3 that are intended to improve skills in the specific areas of alphabetics, reading fluency, and reading comprehension, or in general reading achievement.

SUMMARY

With a busy teaching practice, it is difficult to keep up to date with current knowledge. This resource kit summarizes implications of recent evidence-based research, but five to 10 years from now there will be much new evidence. One source that provides current and accessible information is the periodical called The Reading Teacher, published by the International Reading Association.

What have I learned about research?

Being knowledgeable about language

In order to evaluate reading instruction programs and teach reading explicitly, the teacher must have a solid foundation in language. Teachers who are native speakers of English use language knowledge unconsciously; however, in order to explain this knowledge to students, teachers need to raise their own knowledge to a conscious level. Pre-service teachers need to receive direct instruction about the sound structure of words (Stainthorp, 2004). Receiving this direct instruction will provide teachers with the conscious knowledge they need to instruct students.

This section gives an overview of the different areas of language knowledge and the terms involved. Similar to all sections in this kit, it provides a foundation to build upon.

Go to our accompanying DVD-ROM or website to view a video clip on the preparation of teachers of reading and writing.

[Video 2]

Research findings on teachers' knowledge of language

Spear-Swerling, Brucker, & Alfano (2005) report findings of studies on teachers' language knowledge and self-perception in comparison to their preparation and experience. The following is an excerpt from their report:

> *Studies have documented a relationship between teachers' knowledge of language and the reading achievement of their students, providing support for the idea that such knowledge should be included in teacher preparation. Lacking this kind of knowledge, teachers may misinterpret assessments, choose inappropriate examples of words for instruction, provide unintentionally confusing instruction, or give inappropriate feedback to children's errors. Knowledge about word structure is important for all educators responsible for teaching basic reading and spelling skills, but it is particularly critical for those who work with struggling or disabled readers whose difficulties with word-level reading skills are well documented. (p. 267-269)*

If reading came naturally, teaching would be a much easier job. Children would learn to read as readily as they learn to speak. Teachers would only need to give students the chance to practice their skills. But children do not learn to read just from being exposed to books. Reading must be taught. For many children, reading must be taught explicitly and systematically, one small step at a time. That's why good teachers are so important.

Reading Rockets, 2008

It should not be assumed that experienced elementary or special education teachers have adequate language knowledge (Bos, Mather, Dickson, Podhajski, & Chard, 2001; Cunningham, Perry, Stanovich, & Stanovich, 2004; McCutchen et al., 2002; Moats, 1994, 2004). In a survey of perceptions and knowledge of pre-service and in-service teachers, Bos et al. (2001) found that both groups demonstrated limited knowledge of phonological awareness or of terminology related to language structure and phonics. Both groups perceived themselves as only somewhat prepared to teach early reading to struggling readers. These findings indicate a mismatch between what teachers know and what research supports as effective early reading instruction for children.

How conscious are you about your language knowledge and reading skills?

Try reading the following words from Old English aloud:

gadertang delan lafian campwig faecnig tacnberend

How successful were you? Did you realize what skills you used? If you did read these words, you were able to sound them out using sounds of the letters or letter groups. You did not have any other clues as to how to pronounce the words.

The following is an excerpt from the famous nonsense poem Jabberwocky by Lewis Carroll. Read it aloud.

`Twas brillig, and the slithy toves
Did gyre and gimble in the wabe:
All mimsy were the borogoves,
And the mome raths outgrabe.

Again, how successful were you and what skills did you use to read the words successfully? Did you guess the words? Did you try sounding them out? Which words did you seem to understand in this excerpt? The pattern cues to indicate what role the words played (syntax, grammar) (e.g., the '-y, the '-s' for plural, the punctuation, the sentence structure with simple words such as "and", "the", "in", "were") all help in understanding the text. Because the patterns are familiar to you as an English reader, you can read the above excerpt fluently, with expression, as if you understood its meaning.

These skills – sounding out letters and breaking words apart into patterns – are learned. We all sound out words and we may not be aware of it. We learned these skills consciously at one time, and as we improved, they became automatic and unconscious to us; children need to go through the process of learning the skills consciously and practicing them until they become automatic.

Table of core language competencies for teachers

This overview of core language competencies is laid out in chart form for easy reference. Basic definitions of language structures and skills are followed by examples of what a reading teacher needs to know about them and examples of how a reading teacher may use that knowledge in practice. The concepts presented here will be discussed in further detail later in the kit.

Term	Definition	Examples	Teacher Competency	Use in Practice
Phonemic Awareness	• Awareness of individual speech sounds • Phonemes may indicate differences in meaning • There are more phonemes than letters; in English, 24 consonants and 19 vowels	• See phonemes chart following	• Know the 43 phonemes in English • Identify and select examples of words containing a specific phoneme (e.g., two, tea) • Select contrasting pairs of words that differ only in one phoneme (e.g., hat, mat) • Recognize phoneme substitution by a student in their speech, reading, and spelling (e.g., dat for that; lose for rose)	• Create lessons, teaching the phonemes in order of difficulty and grouped for similarities • Choose words that are logical groups for differentiating phonemes • Understand a substitution and intervene and correct it • Give student special help when they are missing a phoneme • Plan explicit activities to enhance awareness of phonemes
Graphemes	• Ways to spell the sounds • Are composed of one to four letters • In English, there are more than 250 graphemes	• Spellings for the 'long a' sound (/eɪ/ phoneme): cake, weigh, they.	• Practice recognizing and writing groups of words that share spelling patterns • Patterns can be learned with a combination of pattern study and memorization	• Choose words that are grouped into families to illustrate sound patterns and spelling patterns (e.g., mate, gate, date, plate, crate; but not straight, weight) • Help students with spelling by linking to sounds
Phonological Awareness	• All aspects of speech processing and production • Varies because of dialectical variation (e.g., regional accents use different sounds)	• Co-articulation: Speech sounds are folded into one another during normal speaking (e.g., 'Here you are' might become 'Hery'ar')	• Understand the continuum from simple phonemes to more complex clusters of sounds in order to follow a logical sequence in instruction • Know how sounds are articulated in order to encourage students to articulate correctly	• Choose examples of words that group onset (beginning) and rime (end) units (e.g., ran, run, rim, rip vs. gate, mate, late) • Plan lessons that develop awareness of syllables • Link phonological skills to reading and writing. Have students sound out words they read • Recognize phonological errors in children's speaking, reading, and writing

Term	Definition	Examples	Teacher Competency	Use in Practice
Spelling	Language of origin and history of use can explain many spellings: • Old English: many of the basic words • Latin and Greek: many words made up of base words with prefixes and suffixes • French gives us many words • Meaning and part of speech can determine the spelling • Speech sounds are spelled with single letters and/or combinations of up to four letters • Spelling of some sounds is governed by established conventions of letter sequences and patterns	• Old English: cough, bough, dough • Latin/Greek: migrate, migration, immigrant, immigration, migrating, migratory • French: garage, with a soft "g", as opposed to the sound in "nudge" • Part of speech: e.g., adjective vs. adverb (happy, happily; careful, carefully) • Meaning: e.g., its (possessive pronoun) vs. it's (contraction of it is) • "aigh" in straight • Double consonant "protects" the short vowel from becoming a long vowel sound hopping vs. hoping, hotter vs. hotel comment vs. moment	• Understand that English spelling has not changed to eliminate inconsistencies and to reflect changes occurring in its sound system over time • Understand that English retains spelling of the base word, even though rules of pronunciation dictate a different way of sounding out that word: same spelling for the /k/ sound of "electric" and the /s/ sound in "electricity"	• Adopt a systematic plan for teaching the decoding and spelling of new words • Teach following the developmental nature of spelling • Construct appropriate word lists • Have students recognize and sort predictable and unpredictable words (gate vs. straight) • Link decoding and spelling to show the reason for the activity • Know that errors can occur from a child's natural tendency to write what they hear
Vocabulary	• Oral knowledge of new word meanings • Learned in relation to other word meanings • Many new words are learned incidentally through reading • Others are learned through repeated exposure in context, plus formal study	• Concerned with the meanings of the words (semantics) and their use; not to be confused with orthographic (spelling) patterns	• Identify antonyms, synonyms • Group words according to similarities, patterns, meanings • Group words in categories and differentiate characteristics within groups (e.g., differentiating the meanings in the following group: "ambling, stalking, racing, hopping")	• Select words that are central to understanding the text • Make linkages (grouping associations, placing new words in a context) • Teach classes of words to group the vocabulary • Teach properties of words (rhyming, two syllable, same spelling of vowel sound) to show another way of grouping them
Grammar and Syntax Phonological Awareness	• Parts of a sentence and their different forms • How words are used correctly in sentences	• Adverbs, verbs, adjectives, pronouns, nouns, articles • Tenses of verbs, forms of adjectives and adverbs, agreement of noun and verb	• Understand parts of sentences, the different forms of words • Analyze and construct common paragraph forms: development by detail, by comparison and contrast • Know five cohesive devices used in good writing: -Pronouns -Repetition of key words and phrases -Transitional expressions -Parallel structures of sentences -Old/new information	• Understand the mistakes a student may be making and explain how to correct those • Show the structure of sentences, paragraphs, and texts visually • Support writing development • Pinpoint problems in writing or in reading and comprehension • Give guidance and corrective feedback

(Adapted from Moats, 1999; Fillmore & Snow, 2000)

Chart of phonetic symbols for 43 phonemes in English

Vowel Phonemes		
01	/i/	Meat
02	/ɪ/	Pit
03	/e/	Rebate
04	/Ɛ/	Pet
05	/æ/	Pat
06	/u/	Too
07	/Ʊ/	Good
08	/o/	Okay
09	/ɔ/	Saw
10	/ɑ/	Pot
11	/ə/	Ago
12	/ʌ/	Luck
13	/ɚ/	Butter
14	/ɝ/	Girl
15	/aʊ/	Cow
16	/aɪ/	Sky
17	/ɔɪ/	Boy
18	/eɪ/	Day
19	/oʊ/	Go

Consonant Phonemes		
20	/p/	pit
21	/b/	bit
22	/t/	time
23	/d/	door
24	/k/	cat
25	/g/	get
26	/f/	fan
27	/v/	van
28	/θ/	think
29	/ð/	that
30	/s/	send
31	/z/	zip
32	/m/	man
33	/n/	nice
34	/ŋ/	ring
35	/l/	leg
36	/r/	rat
37	/w/	wet
38	/h/	hat
39	/ȷ/	yam
40	/ʃ/	shop
41	/ʒ/	leisure
42	/tʃ/	Chop
43	/dʒ/	jump

(Adapted from Small, 2005)

Chart of morphemic layers of the English language

An important skill to teach children who are learning to read is how to break words into their parts and obtain meaning from those parts. Morphemes are the smallest meaningful units in language and can be combined to form new words with different meanings (e.g., 'walk' is one morpheme and 'walk-ed' contains two morphemes). English has a rich vocabulary because it has acquired morphemes from other languages over time. Morphemes in English come from three main historical sources: Anglo-Saxon words, Latin words and Greek words. Students both enjoy and benefit from learning through activities about the origins of words (e.g., learning about ancient writing systems; learning the origins of new words; Henry, 2003). This type of knowledge increases their vocabulary, and helps with their reading, writing, and spelling.

Layers of the English language

Origin	Morpheme
Base: Anglo-Saxon	• Short common words (e.g., pat, thin, cap) • Can form compounds: news-paper, pig-tail, thumb-tack • Inflections added (e.g., to verbs: "-ed, -s, -ing"; to adjectives "-er, -est"
Second Layer: Latin	• Technical, more formal words • Affixes (e.g., re-, mis-, dis-, pre-, con-, ad-, ab-, ex-, in-, un-, -ion, -ive, -or, -(i)ous, -ness, -ment, -ful) • Roots (e.g., "tract", "fect" as in unattractive; appointment, disruption contract, infection) • Plurals: curricula, stimuli
Third Layer: Greek	• Specialized words, often science • Compounds: geography, phonology • Plurals: syntheses

(Adapted from Henry, 2003; Moats, 1998)

Articulation

We pronounce the sounds of our native language automatically, without thinking about where to put our tongue or our lips. However, some students have trouble articulating sounds, in particular students who are English language learners (ELL). A child's articulation affects their phonological awareness and their phonemic awareness, and this in turn will affect their reading ability. A conscious knowledge of how speech sounds are produced allows a teacher to understand possible mispronunciations of speech sounds. A chart of how English consonants are articulated is provided below.

Articulation chart for consonants

	Lips Touch		Upper Teeth Touches Lower Lip		Tip of Tongue Touches Back of Upper Teeth		Tip of Tongue Touches Ridge Behind Upper Teeth		Tongue Touches Back of Ridge		Back of Tongue Raised		Open Mouth	
	W*	S*	W	S	W	S	W	S	W	S	W	S	W	S
Tap/Short	p	b					t	d			k	g		
Forcing Air Through Narrow Opening			f	v	ɵ	ð	s	z	ʃ	ʒ			h	
Nasal (Through the Nose)		m						n				ŋ		
Sound Passage not blocked								r, l						

* W = voiceless (like a whisper); * S = voiced (sounded)
(Adapted from Small, 2005)

SUMMARY

This section provided a general overview of language knowledge. It shows how essential it is for a teacher to have a thorough knowledge of language in order to explain, model, correct, and evaluate their students. This knowledge may also be helpful in recognizing and understanding areas of difficulties for students leading to appropriate interventions.

What have I learned about language?

Reading and writing development

Model of reading development

We learn oral language naturally, without formal training. However, all students, especially those who are at risk for difficulties, can benefit from explicit, step-by-step training to integrate the oral sounds of language and the code of written text.

While there are no easy answers or quick solutions for optimizing reading achievement, an extensive knowledge base now exists to identify the skills children must learn in order to read and write well. These skills can help prevent the predictable consequences of early reading failure (Armbruster, Lehr, & Osborn, 2003).

"Children learn to speak and walk by instinct. But did you know reading is different? Reading needs to be taught."

(Reading Rockets) Go to our accompanying website or DVD-ROM for a link to this page.

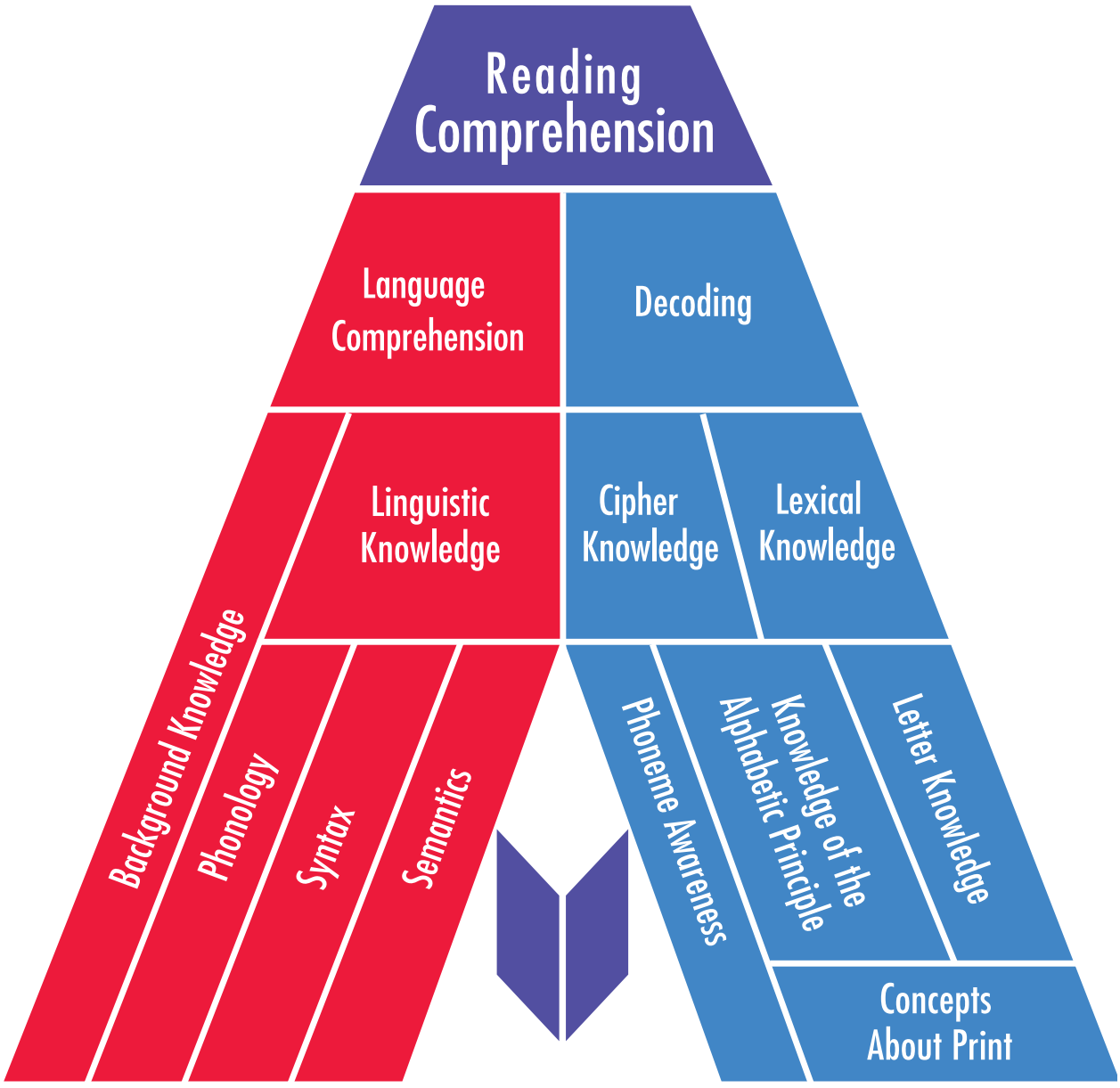
The goal of literacy

- To be able to construct meaning effectively from written text.
- To encode written text accurately in writing.

Studies provide evidence that there is a link between a child's strengths in reading and writing and his or her stage of cognitive development. For example, in the early grades, strengths in phonological awareness seem to outweigh other abilities such as short-term memory capacity. As cognitive abilities develop, strengths in comprehension knowledge and in short-term memory demonstrate greater importance in the reading process (Konold, Juel, McKinnon, & Deffes, 2003). Children in any class are at different stages of cognitive development and have different balances in their strengths.

The cognitive "Framework A"

SEDL (2008) developed a research-based graphic "Framework A" that illustrates the cognitive components of reading development. The components are shown as separate within this diagram but in fact they are all linked and intertwined. The "Framework A" illustrates how these important components of reading development build up from the bottom, the foundation toward reading comprehension as the goal at the top.

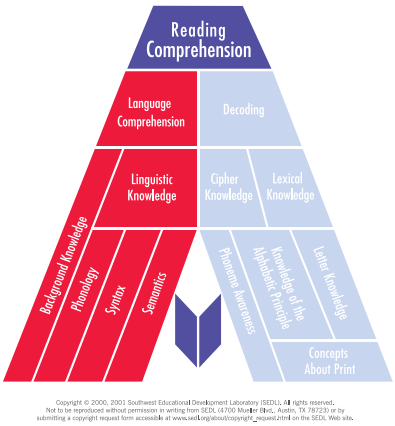


Reprinted with permission from SEDL, 2008

For further information go to: http://www.sedl.org/reading/framework/elements.html and read about each of the elements of the "Framework A", with links to instructional activities, assessment resources, and related research for each element.

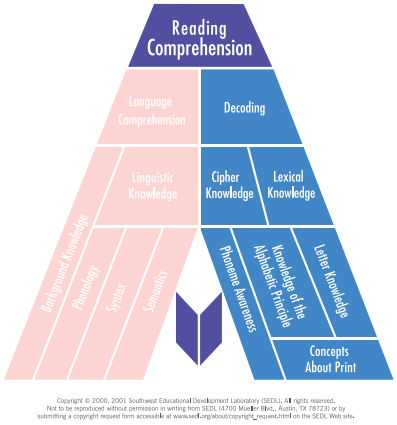
Red Side of "Framework A"
(the "oral" side, the comprehension of language):

- Phonology (sounds of the language), syntax (grammar) and semantics (word knowledge/vocabulary) all contribute to a child's linguistic knowledge (ability to put together or understand proper sentences).
- Background knowledge combined with linguistic knowledge completes the necessary components for language comprehension.



Blue Side (the "written" side, the decoding of text):

- Concepts about print (child's knowledge of the form and purpose of written text) combined with phoneme awareness (ability to manipulate the sounds in language) are foundational skills required for reading.
- Knowledge of the alphabetic principle and letter knowledge build upon the foundational skills.
- These components combine to create a child's lexical knowledge (knowledge of printed words) and cipher knowledge (understanding the rules for writing and spelling), which in turn determine a child's decoding skills (ability to break sentences into words and into units of meaning).



Both sides of the framework are equally important for reading instruction. Therefore, weakness in one or more components will negatively affect the other components. Together all of the cognitive components must interconnect and build from each other to determine a child's reading comprehension ability.

Go to our website or DVD-ROM for a link to a University of Oregon webpage that explains how all elements of reading work together.

As can be seen in the above graphic, the teaching of reading and writing involves providing a balance of the different components. Of equal importance in reaching the goal of understanding reading are:

- the development of decoding skills (through connecting sounds to print, learning rules for spelling and developing a knowledge of printed words)
- the development of oral language skills (through building vocabulary, enhancing grammar by forming correct sentences, and increasing listening comprehension).

Effective reading and writing instruction balances the oral and the written components. They are most effectively taught concurrently and not in isolation. For example, through storybook reading, a child can learn how speech sounds connect to print in addition to developing their oral vocabulary and listening comprehension skills. The balance of time spent on the various components will change as reading and writing skills advance. The foundation decoding skills require more instruction time in Kindergarten and Grade 1. Vocabulary and comprehension skills are originally learned orally; however, as children develop, they begin to learn these skills through print. If a child is weak in one skill, providing instruction through multiple modalities is important for increasing his or her chances of reading success (e.g., hearing the word, saying the word, writing the word, seeing the word written down, and reading aloud the sounds of the word; St. John, Loescher, & Bardzell, 2003).

Go to our accompanying DVD-ROM or website to view a video clip on how oral and written components should be balanced at each grade level.

[Video 3]

Many studies have shown that reading and writing skills support and reinforce each other as they are learned. For example:

- Morphological awareness (i.e., awareness of the structures of words, roots and affixes) makes a significant contribution to the improvement of reading comprehension, vocabulary, spelling, and fluency for students (Nagy, Berninger, & Abbott, 2006).
- Direct and systematic development of beginning readers' awareness of phonemes in spoken words and print-sound connections through phonics skills significantly improves their acquisition of conventional spelling (Bryant, Nunes, & Bindman, 1999).

Reading and writing development

Components in the development of literacy

Although the component skills are best taught concurrently, for the purpose of presenting them clearly, they are separated in the sections ahead. In each section, a brief summary of evidence is presented, followed by evidence-based practical applications for the classroom. Often a case study is provided. The descriptions of suggested activities may combine several of these elements as a student does not learn them in isolation. Examples of appropriate assessment for the components are also provided.

1 Concepts about print / print awareness

Jordan is just entering school. There are few books in his home. Jordan has never been to a library. When he is presented with a book, he can identify the cover, but does not follow along with the words. He also writes randomly on paper (e.g., does not start at the top of the page or at the left hand side). It is clear that he does not have much experience with print and that his home life does not facilitate literacy.

Can Jordan be supported?

What can happen if Jordan is not helped?

How long will it take to get him caught up?

Consider Jordan's situation and read the following section. Then reflect upon how you would address this situation if a similar scenario arose in your classroom.

The evidence

- Children with multiple exposures to text within their environments often develop print awareness at home before they start school (Wood, 2004).
- Children with limited exposure to text within their environments are inexperienced with print awareness; it is essential that these children receive additional support in order to catch up with their peers (Cunningham & Allington, 2007).
- With an intentionally literacy-rich environment and explicit instruction at school, children with limited print awareness can catch up with their peers (Cunningham & Allington, 2007). (see p. 89).
- Early assessment upon school entry is critical in order to determine if a child is at risk due to inexperience (Cunningham & Allington, 2007).

Explicit instruction of print awareness

The following chart outlines print awareness skills, beginning with the most basic to more advanced.

Print Awareness	Activity / Instruction	Assessment
Child is aware of text	Classroom is full of books, has print on walls	
Child understands how text works	Teacher points out text on walls and reads it; points out individual words; reads stories aloud to class	Child points to certain words
Child understands that text contains information	Teacher reads to group, showing book and talking about the story	Child "pretend reads" the text Child writes a pretend story about a picture
Child learns to flip through books from beginning to end, holding them right-side-up	Teacher shows the title, the author's and illustrator's names on the front cover, and shows the back of the book Children "pretend read" same familiar stories to themselves	Child holds book right-side up and reads pages from beginning to end Child can identify location of cover page, title and author/illustrator names
Child understands that text is read top to bottom and from left to right	Teacher follows words with finger while reading them aloud, and talks about how reading is from "this side" to "this side" and from the top of the page to the bottom	Child points to text he/she is "pretend reading", perhaps identifies individual words in the passage Child's scribble writing is in lines, starting at top, one above another, and going from left to right, with spaces between lines

A video clip from Reading Rockets 101 illustrates a child developing print awareness.

Link to it from our website or DVD-ROM.

What have I learned about print awareness and how to teach it?

2 Connecting speech sounds to print / decoding

The evidence

- Children must be taught how writing systematically encodes spoken language (Rayner, Foorman, Perfetti, Pesetsky, & Seidenberg, 2001).
- Evidence from many studies indicates that oral and print development must be closely integrated and coordinated in reading instruction. Students show the most gains in letter knowledge, phonological awareness, alphabetic principle (phonics), and reading success when skills are taught in an integrated program (Blaiklock, 2004; Foorman, Chen, Carflson, Moats, Francis, & Fletcher, 2003; Schneider, Roth, & Ennemoser, 2000; WWC, 2006b).
- Awareness of individual phonemes develops more quickly when children already know letters or when letters are used within phonemic awareness instruction (Ehri et al., 2001; Lonigan, 2007).

Go to our accompanying DVD-ROM or website to view a video clip on how children learn to read.

[Video 4]

2a) Letter knowledge

Letter knowledge is not simply reciting the alphabet. The knowledge of letters includes:

- being able to name letters (the name associated with a letter is invariant: "A" has the same name; the sounds it makes in words are what vary, and the letter "A" can make many different sounds, as in "cap, cape, coat, car")
- identifying both uppercase and lowercase letters, in isolation and in words
- handling letters, grouping them
- discriminating words one from another

Kelly knows the alphabet song by heart, and sings it whenever she has the chance. She can name each letter, but does not understand what they represent. Kelly often confuses "p" with "q" and "b" with "d." Kelly's teacher knows that before she can read, she needs to be comfortable with the alphabet and understand the basic concepts of the alphabet. These challenges are affecting her beginning reading abilities and Kelly's parents are worried these difficulties will stay with her and affect her first reading experiences.

How can Kelly's understanding of letters improve to help her as a future reader?

What would you do if you had a student who did not grasp the concept of letter knowledge? How could he or she be helped to ensure a literate future?

Read the next section for ideas and resources on how to help your students master the concept of letter knowledge.

The evidence

- Teaching letter knowledge concurrently with phonological awareness shows more improvement in student results than if the skills are taught separately (WWC, 2006b).
- Children with greater knowledge of the alphabet tend to have better phonological awareness skills (Johnston, Anderson, & Holligan, 1996).

Explicit instruction of letter knowledge

- Present letters in uppercase and lowercase at random (children know uppercase first, and need practice with lowercase letters; Blair & Savage, 2006); ask children to tell you about each letter. Ask them to give the name, the sound it represents, or a word beginning with that letter.
- To familiarize students with the appearance of letters, ask them to put letters into groups by how they appear (e.g., the letters a, b, c, d, e, g, h have curves and the letters p, g, q, j, y have hanging sticks).
- Teach letters along with teaching sounds, and ask students to match the sound to the symbol.

The video clip "Letters and Sounds" on the Reading Rockets website illustrates a Kindergarten teacher working with a student on letters and the sounds they make. See our companion website or DVD-ROM for the link.

Assessment of letter knowledge

Even if students do not know letter names, letter knowledge can be assessed. The teacher can provide cutouts of letters, numbers, and symbols and have students separate them into their respective groups. Ask the children what they know about each letter, for example, "what sound does it make?" or "do you know a word that starts with this letter?" Students may also be asked to separate letters into upper and lowercase, as well as vowels and consonants (Wren, 2002b).

The teacher can say simple words, and ask students to write down one letter for each word. At this stage, children often represent a whole word with a single letter (e.g., for the word "dog", the child may only write a "d"), but this reflects an understanding that a word exists as a representation of an object (Wren, 2002b).

2b) Phonological awareness

Phonological awareness is an "umbrella" term used to refer to awareness of any aspect of sound structure in language. It includes:

- understanding that words break down into parts (e.g., syllables, phonemes, etc.)
- ability to recognize and manipulate the individual sounds in speech (e.g., through deletion or substitution of sounds within words, language games that manipulate sounds, rhymes)
- ability to rhyme words (e.g., can, pan); ability to break words into syllables (e.g., ba-na-na)
- ability to break syllables into their onset (beginning) and rime (ending) segments (e.g., c and -at)

Sam experiences difficulty with reading, and his spelling is also below grade level. Sam is beginning to notice that he is not as far along as the other students in his class and has started to lose motivation for reading. His teacher has been trying to keep him motivated by supporting and encouraging him where she can, but something needs to change fast, before Sam completely loses confidence in his reading ability. Sam's teacher decides to check where Sam falls on the benchmark chart, and notices that despite the fact that he is in Grade 2, he has not mastered many of the skills involved with phonological awareness.

How can this teacher support Sam's development of phonological awareness?

She plans on giving Sam some extra work to do at home with his parents, but what should it include?

How can this problem be tackled before it becomes a debilitating issue for Sam?

The evidence

- Children with advanced phonological awareness skills have better reading development than their peers (Whitehurst & Lonigan, 1998).
- Regular exposure to activities that promote phonological awareness skills enhance reading development for all students (Blachman, 2000).
- Two recent reviews of interventions found that instructional activities in phonological awareness were most effective when conducted in small groups or with individual students. Significant improvements occurred in phonological awareness, letter knowledge, reading and spelling skills. These results were effective regardless of the age of the child or the child's previous reading experience (WWC, 2006a, 2006b).

A child's awareness of the speech-sound relationship, measured in Kindergarten, predicts his or her reading ability in the primary school years.

(Catts, Fey, Zhang, & Tomblin, 1999; National Reading Panel, 2000; Whitehurst & Lonigan, 1998).

Explicit instruction of phonological awareness

- Ensure that children understand that, for example, the word "camel" has an /m/ sound in it, and that the /m/ sound in the middle of "camel" is the same as the /m/ sound at the end of "home" and at the beginning of "moon".
- Syllables: Work with syllables as a first step before isolating individual sounds. For example, syllable splitting: Clap for each syllable in a word "ba-na-na" – three claps
- Rhyming: What words rhyme with "cat"? "bat, rat, sat, mat, fat".
- Phoneme isolation: What is the first sound in pig? "/p/" – the onset (i.e., initial sound). What is the rest of the word? "ig" – the rime (i.e. the rest of the syllable). Work with word families that share onsets or rimes (e.g., for onset: "rat, run, round, race, rub, rocket"; for rime: "ball, fall, small, tall, call").

Go to our accompanying DVD-ROM or website to view a Kindergarten demonstration of a picture rhyming group activity that reinforces phonological awareness.

[Video 5]

Assessment of phonological awareness

Assessment of phonological awareness can involve breaking words into parts. The child is asked to say the word aloud, but is instructed to pause after saying each part (i.e., segmentation). This can be accomplished in several ways: the child can segment compound words (e.g., "cow" (pause) "boy"), non-compound words (e.g., "pen-" (pause) "-cil") and onsets and rimes of words (e.g., /m/ (pause) "-oon"; Wren, 2002b).

2c) Phonemic awareness

Phonemic awareness is part of phonological awareness. It is an awareness of individual phonemes (see chart on p.27).

- It is an ability to notice, think about, or manipulate (e.g., isolate, delete) the individual phonemes in words.
- It is an understanding that individual segments of sound at the phonemic level can be combined to form words (i.e., blending or synthesis).

Not to be confused with phonics

Phonics is a teaching term for the study of the relationships between letters of the written language and the sounds of the spoken language (sound-symbol correspondences)

If children are to benefit from phonics instruction, they need phonemic awareness.

Aaron is in Grade 1. He knows his alphabet and reads the letter names ("bee – aaa – tee") to try to blend them into words. Another student in his class can say the sounds of the letters and make words ("/b/ /a/ /t/ = bat"). Although Aaron knows and can read some words by memory, he is unable to read new words. When his teacher says a word and asks him to change the first sound to make a new word, he is unable to answer.

What could you do to help your students if they had a similar problem (lack of phonemic awareness)?

How would you assess their development of phonemic awareness and adapt your teaching to accommodate those who need more help?

The evidence

- Instruction that teaches children to manipulate phonemes in words significantly improves reading (National Reading Panel, 2000; SEDL, 2008).
- Most children entering school have normal phonological skills (i.e., they can hear speech sounds) but lack phoneme awareness. For most children, phoneme awareness must be explicitly taught (SEDL, 2008).
- Phoneme awareness is necessary for the child to understand that the letters in written words represent the phonemes in spoken words (National Reading Panel, 2000, SEDL, 2008).
- A well-established finding in reading research is the predictive relationship between phonemic awareness and reading acquisition (Kame'enui et al., 1997).

Explicit instruction of phonemic awareness

- Teach phonemes along with letters, not in isolation (e.g., what sounds do the letters make in this word?).
- Sequence introduction of phonemes from simple consonant sounds (p, b, t, s) to vowel sounds, to complex phonemes (-ng /ŋ/, th /θ/ or /ð/, ch /tʃ/, or sh /ʃ/).
- Scaffold from or build upon what the students know.
- Phonemes should be taught as sounds, without an "uh" sound at the end. This makes blending sounds much easier (e.g., saying "ruh-a-nuh" makes blending the individual sounds in "ran" difficult). The sounds /s/ and /m/ are the easiest to say without adding an "uh" sound; therefore, they should be used first when teaching phonemic awareness.
- Facilitate blending sounds by providing multiple opportunities to practice.
- The child does not need to learn all phonemes; they can demonstrate awareness of sounds in words using a small list of phonemes (SEDL, 2008).

Reading Rockets provides a video of a one-on-one practice of playing with the sounds of letters. See our website or DVD-ROM for the link to this video.

Phonological and phonemic awareness activities can be done with nonsense words. Go to our accompanying DVD-ROM or website to see a classroom demonstration.

[Video 6]

Sample phoneme manipulations

Phoneme addition: "What happens when you add /s/ to the beginning of 'park'?" "spark"
Phoneme deletion: "What is 'cat' without the /k/?" "at"
Phoneme manipulation: "What word would you have if you changed the /t/ in 'cat' to an /n/?" "can"
Phonemic segmentation: "What are the sounds in 'cat'?" "/k/ /æ/ /t/ "
Phoneme identity: "What words begin with /s/?" "snake, sit, saucer"
Categorization: "What word does not belong with the others: 'cat, mat, bat, ran'?" "ran"
Blending: Saying sounds together quickly (i.e., blending) produces a word
(e.g., "What word is made up of the sounds /k/ /æ/ /t/?" "cat")

(Adapted from Armbruster et al., 2003)

It is possible to go overboard teaching phoneme awareness. The student just needs to demonstrate awareness that spoken words are made up of phonemes and that phonemes can be arranged and manipulated into different words.

SEDL, 2008

Assessment of phonemic awareness

For beginning phonemic awareness assessment, a child can be asked to complete any of the above manipulations or count the number of phonemes in a word.

Go to our accompanying DVD-ROM or website to view a Kindergarten classroom demonstration of an activity that teaches phonemic awareness and sound-letter correspondence.

[Video 7]

2d) Understanding the alphabetic principle

The alphabetic principle is the code and foundation of most alphabetic writing systems. The alphabetic principle is the understanding that letters and letter patterns in written words have systematic, predictable relationships with the sounds in spoken words.

Madison is in Grade 1 and is excited to learn how to read, just like her older brother. However, every time she is presented with a (grade appropriate) new text, she is unable to understand what is on the page or sound out the words. Madison has not made the connection between the letters and their sounds. To her, letters are abstract objects that have no meaning. Madison has tried to memorize short stories to make it appear she can read, but new reading material intimidates her, and she is losing her motivation to read.

What can you do to make sure all of your students understand phonics, and how letters and sounds correspond?

Read the following section for ideas on how to help students such as Madison with their reading.

Phonics is a teaching term for the study of the alphabetic principle (i.e., sound-symbol correspondences). Phonics is a system for remembering how to read words. Knowing the relationships will help children recognize familiar words automatically and "decode" or sound out new words (Armbruster et al., 2003).

Reading Rockets First Year Teacher Program. This is an online resource for effective teaching strategies; it includes a discussion of how to recognize whether a phonics program is systematic and explicit.

Go to our website or DVD-ROM for a link.

The evidence

A systematic review found that explicit, systematic phonics instruction (see explanation below) has a significant positive effect on decoding text, reading accuracy, and spelling abilities in children; it is also significantly more effective in improving the alphabetic knowledge and reading skills of children from low socioeconomic backgrounds (Torgerson, Brooks, & Hall, 2006).

Explicit systematic phonics instruction

- Clearly identify a useful set of sound-letter relationships.
- Organize the introduction of these relationships into a consistent logical instructional sequence.
- Carefully scaffold introduction of new sound relationships and phonics skills from simple to more complex letter-sound correspondences (e.g., digraphs such as "wh" or "ee", diphthongs such as "oo" or "oi", blends such as "bl" or "str").

Resource:
Making sense of phonics: The hows and the whys, by Isabel Beck (2006). New York: Guilford Press.

Synthetic phonics instruction

Synthetic phonics introduces children to letter sounds before they are introduced to reading from books. After the first few sounds have been taught, students are shown how these sounds can be blended together to make words (e.g., with /t/ /p/ /a/ and /s/, children can form the words 'tap,' 'pat, 'pats', 'taps', and 'sat').

Children are not told the pronunciation of the new word; they sound out each letter in turn and synthesize the sounds together in order to generate the pronunciation of the word. Thus, the children construct the pronunciation for themselves. See the link to Jolly Phonics on our website as an example.

Research results show modest advantages for a synthetic phonics method over an analytic phonics method (looking at words, changing sounds, and creating new words: mug, bug, rug) in the reading, spelling, phonemic awareness and phonics of children (National Reading Panel, 2000; Torgerson et al., 2006). However, these results are not large enough to be significant, and would indicate that both synthetic and analytic phonics are important in developing decoding skills.

More studies on synthetic versus analytic phonics are needed (Torgerson et al., 2006).

For more information about Jolly Phonics, go to our website or DVD-ROM for a link.

Jolly Phonics, a well-researched synthetic phonics program, teaches groups of sound-letter correspondences in the following order:

1. s, a, t, i, p, n
2. c, k, e, h, r, m, d
3. g, o, u, l, f, b
4. ai, j, oa, ie, ee, or
5. z, w, ng, v, oo
6. y, x, ch, sh, th
7. qu, ou, oi, ue, er, ar

(from Bowey, 2006)

Go to our accompanying DVD-ROM or website to view video clips on research results that show a role for invented spelling at the very beginning stages of exploring the connection between sounds and letters.

[VIideo 8]

- Teach patterns for pronunciation such as the "silent e" rule, which lengthens the vowel sound (Bowey, 2006).
- Use a program such as Phonological and Strategy training (PHAST) (Lovett, 2000).
- Explicitly address patterns in irregular words.
- Provide students with ample practice to build sight word recognition of irregular words.
- Allow students many opportunities to practice the new sound-letter relationships in words, sentences, reading, and writing.
- Link phonics instruction to word recognition and spelling activities.
- Establish instructional routines for development of phonetic decoding efficiency.

Go to our accompanying DVD-ROM or website to see a video clip with examples of inventive spelling in a Kindergarten class.

[VIideo 9]

Evidence shows that practicing inventive spelling (e.g., "b-r-o-k" for "broke") is beneficial for young children (usually in Kindergarten). This allows the child to practice connecting sounds with letter patterns (Ehri et al., 2001) and demonstrate an understanding of written language. Once the child has made a connection between letters and sounds, he or she should begin to learn conventional spelling (in Grade 1 or 2).

Sample resource for intervention, prepared by a teacher: A practical guide for 1st grade teachers: Strategies to assist 1st graders who are not reading by January, (Williams 2003).

Go to our website or DVD-ROM for a link.

Examples of phonics assessment

Point to words or groups of sounds and have the student read them aloud. Make a specific speech sound (e.g., "er" or "ow" or "scr") and have the student identify (e.g., written or orally) the letter or group of letters that represent that sound. Ask students "what sound does the letter 'v' make?" or "what sound(s) do the letters "oo" make?" (Wren, 2002b).

What have I learned about decoding skills and how to teach these skills?

3 Vocabulary building

English has a very rich vocabulary and is the only language that has, or needs, a book of synonyms or a thesaurus (Bryson, 1990).

Building vocabulary means both understanding the meanings of words and learning to decode those words. Acquisition of vocabulary improves reading comprehension. In the early years, vocabulary acquisition is largely an oral process.

Amanda is in Grade 3 and is performing poorly in all of her classes. She is still struggling in reading grade level texts; consequently she does not read outside school. Amanda is unable to answer many questions on vocabulary knowledge.
She has started misbehaving in class in the hopes of being sent out, so she will not be called on to answer any questions. Amanda's teacher has noticed this, and has given her book after book to read, hoping that if Amanda simply immerses herself in words, her reading and vocabulary will improve. This does not seem to be working and Amanda is becoming increasingly frustrated.

How would you help Amanda become an avid reader and develop her vocabulary?

Read the following section and discover ways to help students such as Amanda.

Bring words to life!

Through direct instruction, foster word consciousness and engage students in word-play activities to motivate and enhance learning. Raise an awareness of and an interest in words, their meanings, and their power. Students will enjoy words, become actively involved in learning them, and be able to acquire vocabulary independently (Graves, 2000).

The evidence

- Students enter school with large differences in exposure to vocabulary (Hart & Risley, 1995, 2003).
- Many children who successfully learn to read in Grade 1 or 2 are unable to understand books they need to read by Grade 3 or 4. The main reason for this is a lack of adequate vocabulary (Scarborough, 2001; Spira, Bracken, & Fischel, 2005; Storch & Whitehurst, 2002; Rupley & Nichols, 2005).
- Much vocabulary is learned indirectly; in oral language from parents, friends and through stories read either by adults or individually. Typically, students from "advantaged" homes learn two to three times as many words as children from "disadvantaged" homes (Hart & Risley, 1995; White, Graves, & Slater, 1990).
- Over time, students who read less acquire smaller vocabularies, and comprehend less in later years (Stanovich, 1986).
- Teaching vocabulary within a context facilitates better reading comprehension (National Reading Panel, 2000; Beck, McKeown, & Kucan, 2002).
- Research suggests that a rich and varied vocabulary is needed to excel in all school subjects because it relates to successful reading comprehension (Chiappone, 2006).
- Compared to adult prime-time television and typical conversation by college educated adults, children's books contain up to 50 percent more rarely used words (Cunningham & Stanovich, 1998).

Go to our accompanying DVD-ROM or website to view a video clip on research-based recommendations of what vocabulary to teach.

[Video 10]

Implications for teaching vocabulary: indirect learning

- Read aloud to students, with discussion before, during, and after the reading of new vocabulary and concepts (Biemiller & Boote, 2006).
- Encourage students to read extensively on their own (e.g., outside of school or during independent work time; Armbruster et al., 2003).

Read about what vocabulary does to enhance learning: "What reading does for the mind."

(Cunningham & Stanovich, 1998)

Go to our website or DVD-ROM for the link.

Implications for teaching vocabulary: explicit, direct instruction

- Teach a core vocabulary in a developmental sequence (Biemiller, in press), scaffold and build on words that a child already knows.
- Teach written core vocabulary that the child already knows orally.
- Start early and teach many words; children will remember only 20-25 percent of the words l earned indirectly, but up to 40 percent of those explicitly explained (Biemiller & Boote, 2006).
- Teach at least 10 words a week. These words should include useful words as well as those that are not part of the students' everyday experiences. Students retain new vocabulary better if they see it in writing, are asked to pronounce it, and are asked to determine the meaning of the word (Rupley & Ehri, 2008).
- Teach oral vocabulary in Kindergarten and Grade 1, and both oral and written vocabulary in Grades 2 and 3 (Beck et al., 2002).
- Begin direct instruction of specific vocabulary very early in Kindergarten. This means explicit teaching of word meanings through contexts, definitions, multiple exposures, and meaningful experiences. Seeing vocabulary in rich contexts provided by authentic texts produces better understanding and retention of vocabulary meanings (Coyne, McCoach, & Knapp, 2007; National Reading Panel, 2000).
- Engage students in developing categories, word families, and in word-play activities to motivate and enhance learning (Graves, 2000) and to aid in later retrieval.
- Explicitly teach word-learning strategies to deepen students' knowledge of word meanings. For example, work with new vocabulary to develop students' understanding of how the word r elates to similar forms and how the word can be used grammatically (National Reading Panel, 2000).

Go to our accompanying DVD-ROM or website to view a group of video clips on vocabulary instruction.

[Video 11]

These techniques actively engage students in using and thinking about word meanings as well as creating relationships among words; the students learn strategies for independently determining the meanings of unfamiliar words that have not been explicitly introduced.

Sample vocabulary-enriching activities

- Explore words that are both spelled and pronounced the same, but have different meanings, such as "lie" (being dishonest, to rest in a horizontal and flat position), and words that are spelled the same but are pronounced differently such as "wind" (blowing air); "wind" (twist); and "tear" (from eye), "tear" (rip).
- Work with idiomatic expressions (e.g., ants in your pants, let sleeping dogs lie). Idiomatic expressions are hard to learn, and need context, but students enjoy learning them when they are discussed.
- Even young students can play with words. They can draw pictures that "show" the meaning of the word, such as an illustration of "ugly" as a picture of an insect (Gambrell, Morrow, & Pressley, 2007).
- Encourage students to think about new words in different contexts. For example, explore synonyms, antonyms, teach groupings and classifications, use/show examples of the meaning (e.g., tools and hammer).
- Have students provide vocabulary to complete a context. For example, "When I looked out the window and saw that it was raining, I made sure to get my (umbrella, raincoat, etc.) (Gambrell, Morrow, & Pressley, 2007).
- Teach words around contexts and themes (e.g., teach "kitchen" with various kitchen items).
- Directly assist students when they use a dictionary, glossary, or thesaurus because many words have the same spelling or multiple meanings.
- For older grades, teach how the words of Latin and Greek origin are formed (i.e., structural analysis). Help them learn base words (e.g., "govern"), roots (e.g., "pend"), prefixes and suffixes (e.g., "pre-, post-, anti-, pro-, re-, -able, -ment, -tion"). Create activities on base words, adding prefixes and suffixes to form new words.

Examples of vocabulary assessment

Oral vocabulary testing focuses on the understanding of word meaning; written tests involve many other processes outside of vocabulary knowledge. For example, the teacher can present a definition and ask the student (orally) to provide a word that best matches that definition. Alternatively, the teacher can provide a word and ask the student to provide a definition for that word.

The teacher can test multiple words at once. For example, the students can be presented with a group of words (e.g., "thread, string, rope, knot") and asked about which word does not belong in the group. Students can also be asked to provide synonyms or antonyms for given words (Wren, 2002b).

What have I learned about vocabulary development and the role that teachers play in facilitating vocabulary development?

4 Reading comprehension

Reading comprehension involves the construction of meaning from text using a wide variety of skills and knowledge (National Reading Panel, 2000; Snow et al., 1998). Comprehension begins in the earliest grades by actively developing listening comprehension skills, vocabulary and the understanding of concepts (Snow et al., 1998).

The goal of reading is to obtain meaning from written text. The student reaches the stage of reading comprehension by drawing upon oral language, background (i.e., prior experience) and text decoding knowledge. Integrating this knowledge is difficult for early readers; however, once it becomes automatic, the student can appreciate, evaluate, interpret, and enjoy written texts

Cody has trouble understanding everything he reads. Although he is in Grade 4, he still has trouble reading fluently, and always gets stuck on challenging words. Because he focuses so much on reading fluently, he ignores the meaning of what is being read, and often has to go back and re-read pages two or three times. He does poorly on most comprehension activities and has become frustrated.

What are some ways in which comprehension can be improved?

Read the following section and decide how you would help your students with these kinds of reading challenges.

The evidence

- For students learning to read, constructing meaning from text is a conscious operation of applying comprehension strategies. The short-term memory ("working memory") has a restricted space. If too much conscious awareness has to be devoted to sounding out and recognizing words, it is difficult to read above the phrase level (Kirby, 2006).
- As language and vocabulary knowledge increases and decoding becomes more efficient and automatic, comprehension can improve (Kirby, 2006).
- For independent reading, the book should be at the child's level and there should be discussion afterward to monitor comprehension (Barone, Taylor, & Hardman, 2006).
- More research is needed into how to teach comprehension (Pressley, 2000).

Enabling comprehension through instruction

- Scaffold to a new text using other children's books to activate prior knowledge.
- Scaffold from lower to higher level questions to promote higher order thinking skills (e.g., "What is the dog's name?" versus "How do you think the boy felt?").
- Promote dialogue with critical thinking skills. Ask open-ended questions (e.g., "What would you do?") and questions that require text-supported answers.
- Promote reading of a wide variety of texts for many purposes (e.g., recipe books, instruction manuals, maps, informational texts, literature).
- Have students make connections between the given text and other books, knowledge, or their own experience: "text to text," "text to world," or "text to self".
- Have students predict what will happen.
- Have students "sketch to stretch" (i.e., draw what they have pictured in their minds as they read the book in order to stretch their imagination beyond the book).
- For independent reading, ensure text is at the child's reading level.
- Read aloud to students every day.

(Adapted from FCRR, 2008; Rasinski & Padak, 2008)

Reading comprehension instruction

Researchers have developed strategies that students need to use consciously for reading comprehension. The teaching of comprehension strategies is a long-term developmental process, as the student moves from consciously using strategies to gradually internalizing and automatizing those strategies (Pressley, 2000).

Effective reading comprehension strategies for students to practice are:

- comprehension self-monitoring (i.e., checking understanding while reading)
- cooperative learning or reciprocal learning
- use of graphic and semantic organizers (e.g., word maps)
- study of story structure
- predicting
- answering and generating questions; seeking clarification
- summarizing
- meta-cognitive strategies such as re-reading, reading ahead, asking for help, adjusting reading speed, asking a question, paraphrasing, and retelling

(Adapted from National Reading Panel, 2000; Pressley, 2000)

Assessment of reading and listening comprehension

When children are in the early stages of reading, their listening comprehension is better than their reading comprehension as they are just learning how to read. In order to assess a young child's general understanding of a text, teachers can use listening comprehension. The following strategies can be used to assess either listening or reading comprehension.

- Have the child listen to or read a story and then retell it orally or in writing.
- Have the child predict or infer what may happen based on what has happened in the story.
- Students can be asked to construct responses, select multiple-choice answers, or fill in missing words.

Reading comprehension tasks should not be confused with reading accuracy, where mistakes are analyzed to understand the child's decoding strategies and not their comprehension strategies (Wren, 2002b). When children read text orally, they are usually more concerned with being accurate, and do not pay much attention to understanding the content. For this reason, reading comprehension tests are most effective when the child reads the text to themselves and not aloud (Wren, 2002b).

What have I learned about comprehension and about how to teach it?

5 Fluency

Fluency is the ability to read connected text accurately, quickly, and with expression (Kuhn & Stahl, 2003). Fluent readers recognize words and comprehend at the same time (National Reading Panel, 2000).

Reading fluently is vital for students because they do not have to concentrate on "decoding" the individual words, which means they can focus their attention on the meaning of words in the text.

Mary does not seem to be keeping up with the rest of the class. When she is pulled aside for small reading assessments, she focuses on decoding words (e.g., sounding them out, saying them correctly) rather than on inflecting her voice, and does not pay any attention to punctuation in the text. Mary's teacher has tried to put her in round robin reading groups, to increase her exposure to fluent readers. This method has not improved her fluency, and Mary's teacher is getting frustrated, as is Mary.

What can be done to give Mary more confidence while she is reading, and promote fluency?

Read the following section and decide what you would do for students struggling with reading fluency.

The evidence

- In a large scale study conducted for the National Assessment of Educational Progress (NAEP), 40 percent of Grade 4 students read at low fluency levels. They read primarily in one- or two-word phrases, with little or no recognition of sentence structure (Daane, Campbell, Grigg, Goodman, & Oranje, 2005).
- Students who can recognize words rapidly and automatically in isolation or in a list (i.e., automatic word recognition) may not be able to transfer this speed and accuracy to silent reading of connected text (Armbruster et al., 2003).
- Round-robin reading does not increase oral fluency. This may be because students only read small amounts of text, and they usually read this small portion only once (Armbruster et al., 2003).
- Students who score lower on fluency also score lower on comprehension (Jenkins, Fuchs, Espin, van den Broek, & Deno, 2003).
- Repeated oral reading that includes guidance from teachers, peers, or parents has significant and positive impact not only on fluency but also on word recognition and comprehension (National Reading Panel, 2000).
- Students who have not developed foundation skills in sound-letter correspondence and decoding do not improve reading fluency by independent silent reading practice; assisted approaches to fluency instruction are more effective (Kuhn & Stahl, 2003; National Reading Panel, 2000).
- If word recognition is slow, then previous words will have faded from working memory before later words are recognized, and their joint meaning as a text will not be processed (Kirby, 2006).

Working memory is a gateway for learning (Gathercole, 2007):

- Is limited to four or five units and there is no limit to the size of those units.
- Four or five unrelated words, but four or five groups of related words (e.g., rhyming phrases, lists, patterns).

For fluent reading:

- Words are recognized, activating the sounds in the reader's memory.
- Codes are held in working memory while the reader figures out the structure and meaning of sentences and longer passages.

If a student's coding and retention of words is faulty or inefficient, comprehension may suffer (Scarborough & Brady, 2002).

Bafile, C. (2005). Reader's theater: Giving students a reason to read aloud.

Go to our website or DVD-ROM for a link to this resource about using reader's theatre.

Fluency instruction

- Extensive oral reading practice (e.g., re-reading, repetition of texts).
- Guidance and feedback.

Fluency promoting activities

- Choral reading (e.g., reading aloud together as a group).
- Student-adult reading (e.g., reading to each other).
- Tape-assisted reading (e.g., reading along with a tape).
- Partner reading (e.g., a fluent partner provides a model of fluent reading, helps with word recognition, and provides feedback).
- Activities such as reader's theatre (e.g., dramatizing a story) make the re-reading task appealing. For reader's theatre, students rehearse and perform a play for peers. They read from scripts derived from books that are rich in dialogue. Students play characters who speak lines or a narrator who shares background information.

View a PowerPoint presentation on teaching fluency entitled "Developing Fluency in Classroom Settings"

(Reutzel, 2005)

See our companion website or DVD-ROM for the link.

Assessment of fluency

Quick probes (i.e., short assessments that can take less than a minute to perform) are fluency indicators that also demonstrate success in other areas of reading (e.g., vocabulary, comprehension, etc.).

More details on fluency assessment: Big Ideas in Beginning Reading. Go to our companion website or DVD-ROM for the link.

What have I learned about fluency and how to teach it?

6 Writing

Writing is essential to any reading instruction program. As children are read to and learn to read, they gain knowledge about writing (Sulzby, 1990). Reading involves decoding, while writing is the "encoding" of speech sounds into text. Similar to reading, writing must be taught. Writing involves several different aspects:

- learning to spell
- learning to handwrite
- learning to compose text, either as a comprehension activity or as a presentation of ideas in text

It is necessary to emphasize and reinforce the mechanics of writing. Slowly, students acquire the skills to improve their own writing skills, allowing them to think about language in new ways.

Eric is a typical elementary school boy who loves to move and be outside. When it comes to writing though, he is distracted, fidgety, and often bothers other children. Eric is stimulated by visual cues and cannot seem to sit still. In his descriptive writing, he more often describes the pictures in the book and not the text content, and he has difficulty using punctuation correctly. His spelling is random, and he has not completely made the connection between letter and sound correspondences.

How can you help Eric focus on words and become a better writer?

Consider Eric's story as you read the following section. Then reflect upon how you would incorporate research into your classroom to help a student such as Eric.

6a) Spelling (spelling conventions / orthography)

Spelling conventions reflect the morphology of English. The spellings of words reflect differences in origin (e.g., ph for an /f/ sound in photography from Greek).

Spelling knowledge involves accuracy and quality in independent writing. Children are able to self-correct their spelling as they write, by consciously using strategies to check what they have written against what they know of word meanings, grammar, and spelling patterns.

Presenting spelling knowledge in a developmental sequence aids in spelling acquisition.

The evidence

- Spelling and reading rely on the same mental image of a word. Therefore, knowing the spelling of a word makes it more accessible for fluent reading (Snow, Griffin, & Burns, 2005).
- Awareness of grammar and morphology improves progress in spelling (Nunes, Bryant, & Bindman, 1997).
- Each time a child skips over a word and uses a picture to develop meaning, they lose the opportunity to learn the spelling of that word (Harm, McCandliss, & Seidenberg, 2003).
- The results of a longitudinal large-scale study of 1,342 students in 127 classrooms in 17 schools showed that, on average, children were better at reading comprehension than at spelling; this gap increased as children progressed in school. Implications are that progress in reading will not necessarily result in progress in spelling; therefore, spelling must be taught directly (Mehta, Foorman, Branum-Martin, & Taylor, 2005).
- Even beginning spellers use various knowledge sources (e.g., patterns they have already learned, familiar letter-sound correspondences) to guide their spelling; these patterns interfere when they try to learn the spelling of invented words that do not follow spelling rules (Wright & Ehri, 2007). Implications are that scaffolding from known spelling patterns to new ones is important for student understanding of new patterns.
- Ability to read words "by sight" rests on the ability to map letters and letter combinations to sounds (Ehri & Snowling, 2004). For example, "can," "car," and "cane" are similar in appearance, so children need to develop insights into how letters and sounds correspond.
- Word study, the teaching of spelling through patterns and word sorting, can be part of spelling instruction, but research indicates that it may not be sufficient (Leipzig, 2000).
- A recent review (Schlagal, 2002) revealed that children move developmentally from concrete letter-sound strategies to sound-pattern strategies to meaning-pattern strategies for decoding text. These findings imply that there is a need to present spelling words in a careful, linguistically driven sequence. In addition, sufficient developmental variation in a classroom requires the use of multiple lists at the necessary developmental levels.

Go to our accompanying DVD-ROM or website to view a video clip on teaching spelling.

[Video 12]

Explicit spelling instruction

- Integrate spelling instruction with all other aspects of reading and writing (e.g., phonics instruction).
- Explore spelling rules and patterns by using words from a familiar text.
- Illustrate ways to spell a sound (e.g., long "a").
- Provide effective scaffolding for students as they develop their understanding of English orthography.
- Some students need explicit instruction on how to apply spelling rules and patterns they have learned to the writing process (Williams & Phillips-Birdsong, 2006).
- Core words (i.e., sight words) should be spelled accurately from the start.

Guided spelling can begin as early as Junior Kindergarten. Go to our accompanying DVD-ROM or website to view a video on guided spelling.

[Video 13]

The table below provides examples of the variety of graphemes (i.e., letter patterns) that can be used to spell a single sound.

Examples of Graphemes

Speech Sound	Sample Spellings	Graphemes
/m/	mitt, comb, hymn	m, mb, mn
/t/	tickle, mitt, sipped	t, tt, ed
/n/	nice, knight, gnat	n, kn, gn
/ ɔ /	saw, pause, call, bought	aw, au, a, ough
/ u /	moo, blue, chew, suit, soup	oo, ue, ew, ui, ou
/eɪ/	ate, day, straight, weight, wait	a, ay, aigh, ei, ai

Go to our accompanying DVD-ROM or website to watch a classroom demonstration of engaging students in analyzing, distinguishing, and using homonyms.

[Video 14]

Watch a video clip demonstration of teaching spelling patterns from Reading Rockets 101.
Go to our website or DVD-ROM for the link.

Sample activities

Many activities can be built from the approach to spelling as an exploration of language. For example, examine words that sound the same but are different (e.g., their, there; poor, pour; meet, meat; stair, stare; stake, steak).

What have I learned about spelling and how to teach it?

6b) Handwriting

Handwriting begins with the correct pencil grip and letter formation and progresses to connected handwriting.

Online tips for teaching handwriting:
Handwriting Help.
Handwriting Without Tears.
Link to this information by going to our website.

The evidence

- Research evidence suggests that to physically produce writing, many children will need explicit instruction (Edwards, 2003).
- Berninger et al. (2006) found that direct handwriting instruction with visual cues (e.g., patterns, examples) and verbal mediation (e.g., guidance) led to improved automatic handwriting (e.g., rate of writing legible letters) and in one study, improvement in reading ability.

Tip: Give the young child a short pencil that balances well in a small hand, with dots for the thumb and middle finger, on opposite sides of the pencil. Cut and distribute writing strips of different sizes for different writing abilities.

Go to our accompanying DVD-ROM or website to watch a video clip of a Junior Kindergarten classroom learning pencil grip.

[Video 15]

Instruction of handwriting

At the basic level, instruction in Kindergarten, and later if needed, in using the correct pencil grip allows the child to write more quickly and smoothly. This will become of increasing importance as the child learns handwriting. Correct pencil grip can also prevent physical problems with the hand and arm later in life (Berninger et al., 2006).

Online tips for teaching pencil grip:
How to hold a pencil: The correct pencil grip.

Link through our website or DVD-ROM.

What have I learned about handwriting and how to teach it?

6c) Composition

Composition needs to be taught for different types of texts such as persuasive, narrative, expository, creative, and descriptive.

The evidence

- Writing skills are facilitated when students have: a general knowledge about the strategies needed to accomplish learning tasks; an understanding of particular task demands; the ability to select, monitor, and evaluate strategy use accordingly; the ability to use real-world knowledge in conjunction with literacy tasks; and a motivation to put their knowledge to use (Palincsar, David, Winn, & Stevens, 1991).
- Students need to be provided with structures, questions, information, and organizational frameworks that help them approach new literacy concepts (Gallimore & Tharp, 1999).
- Teaching writing involves knowing how to explain, model, and scaffold the stages of planning, drafting, and revising. The child needs daily instruction and practice in order to develop good writing skills (Pressley, Mohan, Fingeret, Reffitt, & Raphael-Bogaert, 2007).

Go to our accompanying DVD-ROM or website to view a video clip on scaffolding a story and teaching meta-cognitive thinking as stages in writing instruction. [Video 16]

Writing instruction

An essential component of writing instruction is teaching students how to generate and organize ideas before writing. The teacher should go through the process with the class or group, and then allow the class to practice:

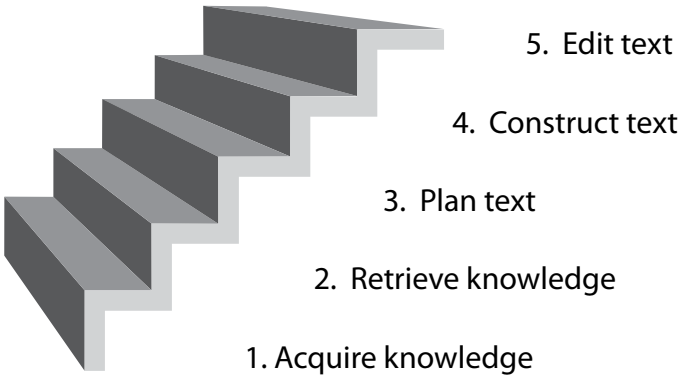
- developing questions on the potential topic by brainstorming
- gathering, evaluating, and synthesizing information and words from a variety of sources
- turning ideas into connected text
- using graphic organizers and idea maps to build structure into the narrative writing task

Well-researched resource for writing instruction: Marvelous Minilessons for Teaching Beginning Writing, K-3 (Rog, 2007).

Writing instruction should follow this sequence: 1) word choice, voice, and fluency; 2) correct spelling, capitalization, punctuation and grammar; and 3) revising writing for clarity, style, and effectiveness.

Instruction should allow students to adjust their writing through the use of different voices (e.g., write a letter as a fictional character, historical figure, or self). Students can also write for a variety of audiences and for a number of different purposes.

Steps in developing writing



Acquire know ledge: receive information (e.g., through reading and listening).

Retrieve knowledge: pull together acquired knowledge and express it in language.

Plan text: understand purpose and goal of writing; know planning processes and steps; know various text structures; be able to use or invent organizing tools to develop writing.

Construct text: understand and apply text conventions such as paragraph structure; organize information from broad to specific; and understand your perspective.

Edit text: recognize errors and places for improvements; monitor construction and cohesion and revise; apply writing mechanics (e.g., capitals, punctuation, and spelling).

(Adapted from The Access Center: Improving Outcomes for All Students K-8, 2008a)

Suggested writing activities

- Model the use of writing frames, templates, or graphic organizers to give students an understanding of narrative structure.
- Ask students to take a text and break it down to its skeletal outline; this helps understanding of how writers develop a story.
- Present students with two sentences, and ask them to combine the sentences to make one more complex sentence (e.g., "Brownies taste good" with "Mary likes to eat brownies" to create "Mary likes to eat brownies because they taste good"). This activity helps young writers with sentence structure and grammar.
- Ask students to insert descriptive words into otherwise plain sentences (e.g., add "black" "big" and "quickly" into the sentence "The spider ran up the wall" to make the sentence "The big, black spider quickly ran up the wall" (Wren, 2002b). Extend this activity or teach at a more advanced level with a discussion of synonyms to substitute for words (e.g., "The enormous black spider rapidly raced up the wall").

What have I leaned about writing and how to teach it?

SUMMARY

Summary of the reading and writing development process

This section has demonstrated how reading and writing skills develop in children. It explained the elements involved in reading and writing instruction including concepts about print, connecting speech sounds to print, vocabulary building, reading comprehension, fluency, and writing. These components are interconnected and build upon one another. For reading and writing instruction to be effective, it must balance the oral language skills (e.g., vocabulary, grammar, listening comprehension) and decoding skills (e.g., connecting speech sounds to print, building a knowledge of printed words, reading comprehension). Finally, effective instruction teaches all the components concurrently at a developmentally appropriate level to optimize student learning and achievement. The time devoted to different areas of instruction will change as students master these skills. The following section on milestones illustrates this change.

Developmental milestones for reading and writing

You are a new teacher, ready for your first day of school. Pencils are in place and all of the books are freshly sitting on the bookshelf at the back of the classroom. The students file in and after the introductions, activities, and assignments, you realize very quickly that there is a wide range of skill levels among the students. You notice several students who are not at the reading level you expected, several others who are reading at a level more advanced than you predicted, and even others who seem to be somewhere in between the two groups. What do you do? How will you teach a group with such a vast range of ability levels? More importantly, at what level should they be?

See the Grade Charts of Developmental Milestones for Reading and Writing (on the following pages) for research-based information on literacy levels by grade.

After an initial screening assessment, examine where your students fall in the milestones chart, think about what you will do with this information, and how this information will change your classroom practice.

Note that the milestones charts are intended as guidelines. Every child is different and no child will fit the chart exactly. If a student is not at the benchmark for his or her grade, find out what level they are at. This will provide direction on how to help the student catch up. If the student does not advance over the next months, then he or she may be at risk for reading difficulties and need intensive help.

Developmental milestones for reading and writing – grade charts

Milestones indicate levels by the end of the school year unless otherwise specified.
Note that the milestones charts are intended as guidelines.

Kindergarten	
Concepts about Print	• Knows a book is read from left to right and top to bottom in English • "Pretend reads", turning pages to get to next part of story • Knows that print is stable, that anyone reading a book reads the same words • Knows that clusters of letters separated by space form words
Letter Knowledge	• Recognizes and names letters, identifies upper and lowercase letters, recognizes some words by sight • Identifies the letter when someone produces the corresponding sound
Phonological Awareness and Phonemic Awareness	• Understands that spoken words are made up of sounds • Can segment sentences into words, and words into syllables • Can identify and produce words with rhyme; compares and matches words based on their sounds • Orally blends syllables (e.g., mon-key) or beginning and end (e.g., m-ilk) into a whole word • Claps or counts the words in a three to five word sentence (e.g., Sue can jump far); claps or counts one, two, or three syllable words • Can identify (name) the first sound in a word • Can segment or blend individual sounds in one syllable words with two and three phonemes (e.g., /f/ + /ʌ/+ /n/ = fun or vice versa) • 25 first sounds per minute by mid-year; 35 sound segments per minute by the end of Kindergarten
Alphabetic Principle - Phonics	• Understands that letters represent speech sounds • Blends the sounds of individual letters to read one-syllable, short-vowel, decodable words (e.g., sun, map) • Can recognize initial sounds
Vocabulary	• Uses and categorizes words to describe daily objects and actions (e.g., colour, shape, size, location) • Says each syllable in 2 and 3 syllable words (di-no-saur)
Decoding	• Recognizes some words by sight, including common, high-frequency words (e.g., a, the, I, my, you, of, is, are)
Listening Comprehension	• Makes connections between the story and real life events • Answers questions about the story • Recalls information about the story (e.g., plot, characters, beginning, and ending) • Makes predictions • Retells stories • Identifies the correct sequence of stories
Pencil Grip and Writing	• Holds pencil correctly • Forms letters correctly (upper and lowercase) • Can print own first and last name • Distinguishes drawing from writing • May use inventive spelling to label drawings • Does representational drawings
Spelling, Conventions and Grammar	• Understands that sentences begin with capital letters and end with punctuation

Grade 1	
Phonological Awareness	• Can create rhyming words • Can identify first, final, and middle sounds in one-syllable words • Can blend three to four phonemes to make a word (e.g., /h/ + /ae/ + /n/ +/d/ = hand) • Can manipulate sounds in words (e.g., "What's 'hop' without /p/?" = /ha/) • Knows 35-45 sounds per minute by mid-year; produces the sounds associated with all individual letters fluently (e.g., one letter-sound per second)
Alphabetic Principle - Phonics	• Matches letters to sounds and sounds out words when reading • Matches spoken words with print • Identifies letters, words and sentences • Produces the sounds that correspond to frequently used letter combinations (e.g., sh, er, th).
Vocabulary	• Has a sight vocabulary of 100 common words • Sorts into categories (e.g., synonyms, antonyms, etc.)
Decoding	• Decodes (i.e., sounds out and blends) words with consonant blends (e.g., mask, farm, slip, play) • Decodes words with the letter combination accurately (e.g., diagraphs: fish, bath, chin; common letter combinations: book, farm, toy) • Uses knowledge of individual letter-sound correspondences and letter-combinations to read monosyllabic words fluently (e.g., mask, skip, play, fish, them, chin, at a rate of one word every 1 to 1.5 seconds) • Increases knowledge of common sight words and reads them automatically (e.g., have, would, there, said) • Reads words with common word parts (e.g., -ing, -ike)
Reading Comprehension	• Recognizes print clues in the text • Makes predictions • Can make connections between background knowledge and text • Can pick out the main idea
Fluency	• Reads grade level material fluently with phrasing, attending to ending punctuation (i.e., no more than one error in 20 words) • Reads grade-level connected text fluently (20-30 words per minute by middle of first grade; 60 words per minute by end of first grade) • Listens to models of fluent oral reading and practices increasing oral reading fluency (e.g., from taped recorded readings, adult to peer models)
Pencil Grip and Handwriting	• Prints clearly • Writes with appropriate word spacing and alignment
Spelling Conventions and Grammar	• Spells frequently used words correctly • Makes errors in spelling based on phonetic correspondence • Begins each sentence with a capital letter and uses ending punctuation • Knows simple, commonly misspelled words; to/two/too • Can distinguish between vowels and consonants
Composition	• Expresses ideas through writing • Writes a variety of stories, journal entries, or notes • Uses writing strategies, such as planning, drafting, revising

Grade 2	
Phonological Awareness	• Has fully mastered associating speech sounds, syllables, words, and phrases from their written forms
Alphabetic Principle - Phonics	• Manipulates sounds and words in English • Can identify two and three syllable words
Decoding	• Sounds out new words • Uses knowledge of advanced phonic elements (e.g., digraphs and diphthongs), special vowel spelling, and word ending to recognize words • Reads compound words, contractions, possessives, and words with inflectional endings • Reads new multisyllabic words (e.g., two to three syllables) using syllabification and word structure (e.g., base/root word, prefixes and suffixes)
Reading Comprehension	• Reads, paraphrases/retells a story in a sequence • Locates information to answer questions • Explains key elements of a story (e.g., main idea, main characters, plot) • Uses own experience to predict/justify what will happen in grade-level stories • Answers "what if," "how" and "why" questions • Reads textual and functional material (e.g., map, atlas, directions, recipe)
Fluency	• Reads grade level stories, poetry, or dramatic text silently and aloud with fluency • Reads spontaneously • Reads and rereads connected text multiple times to increase familiarity with words and fluency • Reads grade-level connected text fluently with phrasing and expression • Increases the number of sight words that are read accurately and quickly • Rereads and self-corrects word recognition errors • Words Correct Per Minute (50th percentile): beginning of year: 53; middle of year: 78; end of year: 94 (Hasbrouck & Tindal, 2006)
Handwriting	• Writes legibly
Spelling	• Spells frequently used words correctly • Progresses from inventive spelling (e.g., spelling by sound) to correct spelling • Begins to recognize orthographic conventions (e.g., knowledge that words must include vowels)
Conventions and Grammar	• Capitalizes months, days of the week, proper nouns, locations, etc. correctly • Uses punctuation correctly (e.g., periods, question marks, exclamation points and quotation marks for dialogue) • Identifies simple adjectives that best fit context • Identifies simple nouns, pronouns, and verbs
Composition	• Organizes writing to include beginning, middle, and end • Uses a variety of sentence types, in writing essays, poetry, or short stories (fiction and nonfiction) • Writes multiple page stories

Grade 3	
Alphabetic Principle - Phonics	• Demonstrates advanced phonetic skills: can use blends, long vowels, short vowels, and consonants correctly • Plays with sounds in words, as in "pig Latin" and other secret codes
Vocabulary	• Uses word analysis skills when reading • Uses clues from language content and structure to help understand what is read • Begins to understand prefixes and suffixes, and root words • Identifies simple literary elements: similes and characterization
Decoding	• More phonic patterns are recognized to increase automaticity of decoding (e.g., silent "e" rule)
Reading Comprehension	• Predicts and justifies what will happen next in stories and draws conclusions • Compares and contrasts stories • Asks and answers "why," "what if" and "how" questions regarding reading material • Uses acquired information to learn about new topics • Determines sequence of events • Distinguishes fiction from nonfiction • Makes text-to-self connections • Uses text features to decode information (e.g., titles, headings, bold print, glossaries, index, table of contents, charts, tables) • Follows simple written directions • Puts concepts in order chronologically, and by order of importance • Finds evidence in the text to support an idea or opinion
Fluency	• Reads grade-level books fluently (fiction and nonfiction) • Rereads and corrects errors when necessary • Adjusts speed and rate of reading • Words Correct Per Minute (50th percentile): beginning of year: 79; middle of year: 93; end of year: 114 (Hasbrouck & Tindal, 2006)
Handwriting	• Writes clearly in cursive and print
Spelling	• Spells simple words correctly • Corrects most spelling independently • Spells compound words, contractions, and possessives correctly • Recognizes and uses morphemic patterns (prefixes and suffixes such as "mis-, -er, -ing") • Uses predominantly conventional spelling
Conventions and Grammar	• Uses commas in lists • Properly pluralizes irregular plurals (e.g., moose, teeth, feet, mice) • Identifies the subject and predicate in a sentence • Identifies the verb(s) in a sentence
Composition	• Writes stories, letters, simple explanations and brief reports • Includes details in writing • Plans, organizes, revises and edits own and others' work • Uses proper sentence structure • Oral and literate styles are mixed in writing • Writing resembles complexity in speech

Grade 4	
Vocabulary	• Learns meanings of new words through knowledge of word origins, synonyms, and multiple meanings • Understands prefixes, suffixes, and root words • Uses a variety of synonyms and antonyms • Increases number of sight words
Decoding	• Decoding is efficient and automatic
Reading Comprehension	• Uses previously learned information to understand new material • Follows written directions and understands sequence of events • Links information learned to different subjects • Uses reference materials (e.g., dictionary) • Explains the author's purpose and writing style • Reads and understands different types of literature (e.g., fiction, nonfiction, historical fictions, short stories, and poetry • Compares and contrasts content read • Makes inferences from texts and determines fact from opinion • Takes brief notes, paraphrases content including main idea and details • Asks and answers questions • Self-monitors and problem solves when text is not understood: rereads, uses context clues, accesses prior knowledge • Uses text features for information (e.g., titles, headings, bold print, glossaries, index, table of contents, charts, tables) • Recognizes bias in writing and persuasive techniques in advertisements, newspaper editorials, speeches
Fluency	• Reads grade-level books fluently, paying attention to punctuation • Adjusts reading speed and rate for specific purposes • Words Correct Per Minute (50th percentile): beginning of year: 99; middle of year: 112; end of year: 118 (Hasbrouck & Tindal, 2006)
Spelling	• Edits final drafts for spelling • Understands and uses spelling patterns (e.g., -ight pattern words) • Increases vocabulary of known spellings • Understands and uses common English spelling rules (e.g. suffix addition - hope + ing = hoping, hop+ing = hopping)
Conventions and Grammar	• Edits final drafts for grammar and punctuation • Uses correct past tense of regular verbs and common irregular verbs (hoped, swung, was/were) • Correctly uses commonly confused words (e.g., their/they're/there and its/it's)
Composition	• Writes effective stories and explanations, including several paragraphs about the same topic • Develops a plan for writing, including a beginning, middle, and end • Organizes writing to convey a central idea • Understands and implements the writing process, especially revision

Grade 5	
Vocabulary	• Learns meaning of unfamiliar words through knowledge of root words, prefixes, and suffixes • Understands "word chunks" such as mark/remark/remarkable • Uses possessives and contractions correctly • Understands simple similes, metaphors, and personification
Reading Comprehension	• Prioritizes information according to the main idea and purpose of reading • Reads a variety of literary forms (including informational, functional, and literary texts) • Describes development of character and plot • Describes characteristics of poetry • Analyzes author's language and style • Uses reference materials to support opinions • Identifies sequence of events • Compares and contrasts stories • Predicts conclusion and justifies response • Identifies difference between fiction and nonfiction • Identifies persuasive techniques in written texts
Fluency	• Reads grade-level books fluently • Words Correct Per Minute (50th percentile): beginning of year: 105; middle of year: 118; end of year: 128 (Hasbrouck & Tindal, 2006)
Spelling	• Spells possessives and contractions correctly • Spelling becomes increasingly conventional
Conventions and Grammar	• Revises writing for clarity • Edits final copies of writing • Creates a complete sentence and identifies fragments • Uses abbreviations correctly (Mrs., Mr., St.) • Uses superlatives and comparatives correctly (biggest vs. most big)
Composition	• Writes for a variety of purposes, with varied sentence structures, using vocabulary effectively within writing • Uses simple similes, metaphors, and personification in writing • Uses more subordinate clauses, writes more consistently in literary style • Begins to develop their own "voice" as a writer

Grade 6	
Vocabulary	• Understands simple similes, metaphors, and personification
Reading Comprehension	• Reads grade level material • Identifies supporting details • Uses context clues to understand difficult concepts/words • Generalizes main ideas • Identifies a sequence of events • Identifies elements in the story, including conflict and climax, and predicts conclusion • Makes complex predictions: consequences of actions, what is learned from a specific portion of the text • Understands cause-effect relationships • Understands persuasive techniques
Fluency	• Reads grade-level books fluently (fiction and nonfiction) • Words Correct Per Minute (50th percentile): beginning of year: 127; middle of year: 140; end of year: 150 (Hasbrouck & Tindal, 2006)
Spelling	• Spelling errors decrease • Spelling becomes increasingly conventional
Conventions and Grammar	• Identifies and uses prepositions correctly • Knows and identifies proper adjectives • Begins to explore the future perfect tense (e.g., "he will have travelled") • Identifies and uses linking verbs (i.e., verbs that connect the subject to additional information about the subject; e.g., appear, become, look) • Continues to improve knowledge of writing conventions
Composition	• Complexity in writing increases, and reaches or surpasses level in speech

(Information gathered from The American Speech and Language Association, 2008; The Institute for the Development of Educational Achievement (IDEA), 2007)

Important elements

Important elements of effective instruction

In addition to having a solid foundation in language, teachers must have a passion for teaching language through effective teaching methods (Hattie, 2003). This section examines some effective teaching practices that apply to reading and writing instruction.

The Importance of Ongoing Professional Development and Coaching:

Research indicates that effective teaching needs to be well supported by professional development and coaching. For example, studies by Bursuck et al. (2004) find that in order for teachers to achieve a level of expertise, professional development needs to be tied directly to classroom practice and should include a careful mixture of hands-on workshops and ongoing on-site coaching. The National Reading Panel, NRP (2000) results showed teachers required instruction in how to explain what they were teaching, how to model their thinking processes aloud, how to encourage student inquiry, and how to keep students engaged.

Overview of research findings on effective instruction

Pressley et al. (2001) describe the elements that should be included in effective instruction: excellent classroom management based on positive reinforcement and cooperation; balanced teaching of skills, literature, and writing; scaffolding and matching of task demands to student competence (e.g., vocabulary level in texts being decodable using the skills the student has learned); encouragement of student; self-regulation (e.g., students actively, through meta-cognitive behaviours, monitor their learning); strong cross-curricular connections (i.e., bringing reading and writing instruction into all subjects); and breaking down lessons into multiple components that are clearly related to one another.

Research indicates that children benefit from tightly structured, well-focused lessons that have an obvious purpose and that are tied to the achievement of clear goals; in the teaching of reading and writing, highly structured, scaffolded, and explicit instructional strategies are powerful tools for motivating children and encouraging them to respond (Armbruster et al., 2003). Snow, Burns, and Griffin (1998) emphasize in their extensive review of evidence that many reading problems can be prevented if such techniques are used for all children.

Swanson (1999) conducted a review of many intervention studies for children with reading disabilities and identified the instructional components that produced the best effects in student learning. The techniques included sequencing, building of automaticity in basic skills (e.g., repetition-practice-feedback), segmentation of information, scaffolding (e.g., controlling task difficulty), modelling problem-solving steps, presenting cues to prompt strategy use, and directed response and questioning. The recommendation of Swanson's review is a combination of direct instruction and instruction in strategy use.

Some of these instruction concepts appear in the next section, in the context of teaching specific reading skills. This section provides background to those concepts for further information and easy reference.

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Engagement and motivation (of both teacher and student)

Motivation of both students and teachers is crucial for success in teaching reading and writing skills.

The effective teacher understands and loves language and reading. This knowledge and enthusiasm motivates students. The effective teacher is also explicit and direct and encourages student engagement. Many research findings show that a high level of questioning, coaching, and allowing children to discover and to be actively engaged (i.e., a student-support stance) facilitates reading and writing growth (Taylor, Peterson, Pearson, & Rodriguez, 2002).

Go to our accompanying DVD-ROM or website to view a video clip on the role of teachers and different teaching approaches.

[Video 17]

The teacher of the mainstream class keeps up an energetic pace, supports new learning and uses modelling, unison response, guided systematic practice, cumulative review, and frequent, systematic error corrections (Carnine, Silbert, Kame'enui, & Tarver, 2004; Simmons, Kame'enui, Coyne, & Chard, 2002). These elements maintain student engagement and motivate them to succeed.

Additional elements in student motivation are connected to the above elements and include: a clearly stated direction to lessons (so that students understand what they are learning and why they are learning it); assignments with time limits; extra support provided to students who need it; a variety of contexts for learning and practice (e.g., computer use, drama); and time for review and discussion following a lesson (Ontario Ministry of Education, 2004).

Guthrie (2001) has extensively researched children's engagement and motivation in reading. He recommends the following techniques:

- Create a context
- Identify a knowledge goal, a purpose, and announce it
- Provide a brief real-world experience related to the goal
- Teach cognitive strategies that empower students to succeed in reading the text
- Assure social collaboration for learning
- Align evaluation of student work with the instructional context

Systematically delivered, explicit instruction

Research shows that many children need explicit, clear teaching and instructions. Concepts that are not taught in a systematic way (i.e., graduated from easy to more difficult, building upon known patterns to develop knowledge of new ones) can be missed (Foorman, Francis, Fletcher, Schatschneider, & Mehta, 1998; Taylor, Peterson, Pearson, & Rodriguez, 2002).

Foorman et al. (1998) found that children receiving "direct code" instruction improved in word reading at a faster rate and had higher word-recognition skills than those receiving implicit code instruction.

Direct code instruction explicitly presents letter-sound correspondences (i.e., explains them directly) and offers opportunities to decode texts written for a particular level with carefully chosen vocabulary that follows the patterns and sounds studied by the students. Implicit code instruction is given while reading a connected text (i.e., discussed as the word occurred in the text, but not in an organized way). The students who can benefit the most from explicit direct code instruction are those with poor awareness of sounds and those who have the largest achievement gaps to close.

A clear description of the characteristics of systematic phonics instruction comes from the FCRR (2008):

- Teacher integrates systematic phonics instruction as part of the total reading program
- Teacher allows for practice of the phonics in words, sentences, reading, and writing
- Teacher maintains consistency in the sequence of presentation of the sound relationships
- Teacher is flexible and engaged, making the learning experience an engaging one for students
- Teacher ensures that children understand the purpose of learning letter sounds and that they are able to apply these skills accurately and fluently in their daily reading and writing activities
- Teacher provides instruction in an entertaining, vibrant, creative, and meaningful manner

Synthetic instruction and analytic instruction

Systematic instruction using synthetic and analytic approaches presents language in a logical structured sequence so that students can learn patterns. Synthetic instruction presents the parts of the language (e.g., sounds typically associated with individual letters: "a", 'f", "d", and those associated with letter combinations: "ng," th") followed by how they come together to form a whole (e.g., words with these sounds, such as "fang"). Analytic instruction presents the whole word and teaches how it can be broken down into its component parts (e.g., into roots, prefixes and suffixes). Bowey (2006) reviewed empirical research results and strongly recommended the use of systematic synthetic instruction when teaching early reading. The teacher needs to introduce students to the common sound-letter correspondences as a "key" to the code, and then the students can learn more complex correspondences independently.

Multisensory instruction

The use of multisensory methods makes links between the visual (what we see), auditory (what we hear), and kinesthetic-tactile (what we feel); this provides students with three pathways for learning sound, letters, and letter formation (Henry, 2000). These pathways are taught together (e.g., learning a new letter or pattern, carefully tracing it with correct and consistent strokes to form the letter, as in the curve of "d" before the stick, and pronouncing the corresponding sound). Henry (2003) found that these techniques, used in special interventions for students with dyslexia, enhance memory and learning; these techniques are not only beneficial for students with dyslexia, but also for all children learning the foundation skills for reading.

Scaffolding

The importance of using scaffolding in teaching reading skills cannot be overstated. Teachers should start from what the children know to give them direction, purpose, and understanding, and then lead them to explore new aspects of learning. The following are examples of scaffolding activities in reading.

- Pre-reading scaffolding: relating the reading to students' lives; motivating; activating and building background knowledge; providing text-specific knowledge; pre-teaching vocabulary; pre-teaching concepts; pre-questioning; guiding in prediction and direction-setting strategies.
- Scaffolding during reading: reading aloud to students; supporting student success with reading efforts using decodable texts; having students read aloud.
- Post-reading scaffolding: questioning; discussing; and engaging in writing, drama, artistic activities, and non-verbal activities, and in making connections to self, to world, and to other texts.

(Adapted form Clark & Graves, 2005)

Teaching meta-cognitive strategies / modelling thinking

Research shows that systematic direct instruction of meta-cognitive strategies significantly improves students' comprehension of text and understanding of new vocabulary (Boulware-Gooden, Carreker, Thornhill, & Joshi, 2007; National Reading Panel, 2000).

Many competent readers (including many teachers) are not aware that that they are using meta-cognitive skills; they engage in these strategic behaviours because they have proven, over time, to be useful (Pressley & McCormick, 1995). Examples of meta-cognitive skills are thinking as you read (e.g., "How can I use this information?"), making a summary of what you have read, looking back over the text to locate information, or re-reading sections.

Teachers need to become conscious of their automatic meta-cognitive strategies in order to model how they think about reading to their students. Students will learn by consciously following and practicing the steps of the strategies teachers have modelled in order to decode words, to understand new vocabulary, to comprehend text, and to develop writing.

Teachers can model reading strategies to students by thinking out loud. For example, a teacher could say, "I forget what the boy did next in the story. Let's go back and re-read that part to find out." The efforts are aimed at giving students the tools they need to develop into independent and self-regulated learners.

Reciprocal teaching

The aim of reciprocal teaching (RT) is to have students apply the information that they have been taught. The essential elements of RT as described by Palincsar and Brown (1984) are the instruction and the application of thinking skills or comprehension monitoring strategies (e.g., predicting, questioning, clarifying, and summarizing).

After the teacher models reading strategies, students are given the opportunity to practice. Students must assume responsibility and use these skills independently; they are then required to teach new material to other students in small groups. Teachers gradually fade their modelling of the strategies and give greater control to the students. Providing students with opportunities to practice, question, and reflect promotes independent student learning.

The importance of starting early – Kindergarten

Results from longitudinal and experimental studies strongly argue for providing reading readiness skills instruction early (Dion, Morgan, Fuchs, & Fuchs, 2004). Developing core skills quickly is essential to learning; children who enter Grade 1 or Grade 2 without these skills are often considered at risk for reading failure. This makes Kindergarten a critical year in a child's preparation for reading.

Go to our accompanying DVD-ROM or website to view a group of video clips on how a literacy rich Kindergarten experience makes a difference.

[Video 18]

Sandy Chen is a Kindergarten teacher and she knows that in her new Kindergarten class, her students have different needs, strengths, and weaknesses. One of her students, Matthew, seems to struggle in many class activities. He cannot identify rhyming words, does not know any children's songs, and when holding a book, it is clear that he does not understand that words are read from left to right. Sandy realizes that, unfortunately, Matthew has had little to no exposure to books or libraries. As a teacher, Sandy knows the importance of providing a language rich environment and knows the positive effect it has on children. Along with providing exposure to books, what can she do to make up for the time Matthew has lost?

When a child needs extra help, what is the most effective way to prepare readiness for reading?

Typical Kindergarten day

Kindergarten should be an intentionally literature-rich experience with print all around, frequent story readings by the teacher, and many books in the classroom. The major goal in Kindergarten should be to facilitate a child's exposure to reading and writing. Many children have already had such exposure at home. However, not all children will have had these experiences and those with little exposure are considered to be at-risk when they enter Kindergarten (Cunningham & Allington, 2007).

Although current practice may require that language activities be taught in one continuous block, research indicates that in Kindergarten, 90 minutes should be spent on activities related to language and that these 90 minutes are best divided into small chunks throughout the day (Cunningham &

Allington, 2007). Print awareness, phonological awareness, phonemic awareness, letter knowledge, and beginning phonics, as well as listening to and talking about stories, looking at print, and writing (often using inventive spelling) are very important parts of the Kindergarten day.

While children listen to the teacher read aloud, they are exposed to a larger vocabulary of words not commonly found in speech. For example, the word "happy" in speech might be elaborated as "thrilled" or "gleeful" in written text. Written language contains more abstract language and complex grammar, for example, passive phrases or decontextualized language (i.e., referring to people, places, and aspects that are not visible to the reader or listener).

Kindergarten is a wonderful opportunity to instill in children a love of reading. By having many stories read to them and being surrounded by literature, children can see reading as an enjoyable and important activity and will be eager to learn how to master the skill themselves.

Print in the Kindergarten class needs to be at the children's eye level, with low bookshelves and labels on objects. Go to our accompanying DVD-ROM or website to see a video clip of a Kindergarten classroom with a print-rich environment.

[Video 19]

What have I learned about effective instruction techniques?

Assessment

It is critical that students be assessed upon entering school, and continue to be frequently assessed in their early years as they learn to read. Assessment is vital in order to identify problems in reading development as early as possible.

An initial assessment provides a baseline from which to measure progress. Informal assessments completed regularly and frequently throughout the year allow the teacher to address students' individual needs with extra assistance or through a change in instruction method. Assessment can be embedded into instruction. A well-planned literacy classroom provides the teacher with many opportunities to observe and assess students through direct observation as they read and respond to a variety of texts. Such formative assessments provide an ongoing picture of the acquisition of reading skills and serve as a guide to the teacher in planning and implementing classroom instruction based upon current student needs. Assessment results thus serve to strengthen teaching and learning (Desrochers & Glickman, 2007).

Researchers have made significant strides in their ability to accurately and reliably assess early literacy skills (Coyne & Harn, 2006).

Go to our accompanying DVD-ROM or website to view a video clip on the importance of assessment.

[Video 20]

a) Screening: This is a brief test designed to assess an individual student in order to identify a need for extra help or intervention. Early screening is important as a formative assessment of the students in the class to establish who needs help and to target teaching efforts.

Several basic skills (e.g., knowledge of letters, phonological awareness, oral vocabulary, and object naming speed) are known predictors of future reading performance (Desrochers, Cormier, & Thompson, 2005; Schatschneider, Fletcher, Francis, Carlson, & Foorman, 2004). A screening of a child's ability in these areas can help to identify children at risk for reading failure (Desrochers & Glickman, 2007).

Go to our accompanying DVD-ROM or website to view a video clip on types of assessment, specifically the screening of children at risk for reading failure.

[Video 21]

b) Progress monitoring: Typically, this type of assessment checks a student's reading skills based on the school curriculum. Progress monitoring, using curriculum-based assessment, relies on quick probes (i.e., short assessments that can take less than a minute to perform) to measure various aspects of oral reading fluency. If the student shows progress on these tests of fluency, research has demonstrated that he or she will also make progress in other skills that are more subjective and take longer to measure (e.g., reading comprehension, vocabulary) (adapted from University of Oregon Center on Teaching and Learning, 2008). Curriculum-based measurement is quick to administer and student performance using these tools is correlated with performance on high-stakes tests (see the many references that support this claim on the website of the National Center on Student Progress Monitoring at www.studentprogress.org). Most curriculum-based measures of oral reading fluency are similar to running records that are commonly used by teachers; the differences are that the probes are highly sensitive to instructional change and are calibrated against year-end curriculum expectations so that student progress throughout the year is easily observed.

Progress monitoring probes are standardized, individually administered tests that monitor the development of pre-reading as well as reading skills. For example, probes tracking fluency of phonological awareness skills, letter knowledge, and decoding fluency are given in Kindergarten, while passage reading fluency is more common in higher grades.

Resources on assessment

The following online resources provide information on a range of assessment tools:

Intervention Central
http://www.interventioncentral.org/

This site, compiled by J. Wright, psychologist, leads to many other sources and offers free tools and resources. For example, this website includes a page of links for Curriculum-Based Measurement (CBM), an assessment tool developed by Lynn Fuchs and being studied for its ability to assess the effectiveness of instructional interventions in applied settings: http://www.interventioncentral.org/htmdocs/interventions/cbmwarehouse.php .

National Center on Student Progress Monitoring,
U.S. Office of Special Education Programs http://www.studentprogress.org/
includes a web library of research articles on assessment.

Reading Assessment Database (RAD):
Summary Chart of Early Reading Assessments for K-2. Available from SEDL (2008) at http://www.sedl.org/reading/rad/chart.html

This searchable database compares assessment tools, with a chart summarizing the early reading assessment tools for Kindergarten through Grade 2.

Go to the companion DVD-ROM or website for video links to the University of Oregon's information on The Dynamic Indicators of Basic Early Literacy Skills (DIBELS).

c) Standardized, diagnostic tests: These tests may be comprehensive, covering many cognitive abilities (Woodcock, McGrew, & Mather, 2001: Woodcock Reading Mastery Tests) or specific (e.g., Wagner, Torgesen, & Rashotte, 1999: Comprehensive Test of Phonological Processing). Some of these tests are used for screening. They are utilized in order to develop a profile of the child's strengths and weaknesses and are administered by trained personnel.

What have I learned about assessment?

Intervention: what to do if the student needs extra assistance

It is important to recognize early on that some students need extra assistance and practice; some may need a different instructional approach if they do not understand a concept the first time it is taught. Research shows that student learning is improved if instruction is matched to student capabilities (Pressley, 2007).

If assessment results indicate a need for intervention and assistance above the mainstream class instruction, higher tiers of increasingly more intensive intervention are considered (Response to Intervention, RTI, Vaughn & Klingner, 2007). Often schools use three tiers:

- Tier 1 refers to mainstream high-quality, effective, evidence-based instruction, provided to all students; it is of benefit to all students and goes beyond the regular instruction.
- Tier 2 refers to additional instruction provided to those students identified through screening as requiring extra assistance; it is most effectively offered through differentiated instruction (described below) within the regular classroom.
- Tier 3 refers to more intensive instruction provided to a small group of students or to individual students, those students whose response to Tier 2 intervention was not adequate; it usually involves taking the student out of the classroom for work with a specialist.

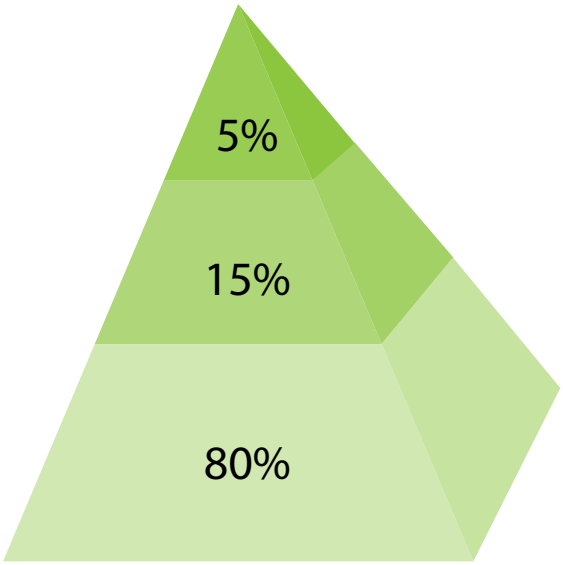
Go to our accompanying DVD-ROM or website to view a video clip for evidence that a high-quality, balanced reading program in Kindergarten (teaching letter-sound correspondences as well as a love of reading) reduces the number of students needing special education in later grades.

[Video 22]

For the Tier 2 intervention, there are many options for help within the regular classroom, including allowing extra practice time and providing additional instruction and further assistance to students in need. The following examples are given by the FCRR (2008):

- Kindergarten: 10 minutes of daily practice in letter sounds, oral blending, and phoneme segmentation.
- Grade 1: 30 minutes of daily practice in new and reviewed letter-sound combinations, decodable words, sight words, and reading decodable text.
- Grade 2: 30 minutes of extra practice reading stories already covered in class, plus fluency building instruction employing a re-reading strategy.

Response to intervention: the percentage of students needing each tier



Tier 3: 5%
Intensive help for those whose response to Tier 2 was not adequate

Tier 2: 15%
Differentiated instruction provided to students in the regular classroom or in small groups

Tier 1: 80%
All mainstream students receive high-quality, effective, evidence-based instruction, which prevents many reading difficulties

Peer assisted learning strategies (PALS)

PALS is an option for offering extra practice for students (Dion, Morgan, Fuchs, & Fuchs, 2004). PALS involves peer tutoring in which the students who have stronger reading skills work with students who have weaker reading skills. For example, Grade 1 students are paired to practice and master skills such as phonological awareness, letter-sound correspondence, decoding, sight-word recognition, and fluent text reading. These activities are structured so that there is role reciprocity, frequent verbal interactions and feedback between the stronger and the weaker readers. The pairing is based on the teacher's informal assessment of abilities (Dion et al., 2004).

The What Works Clearinghouse (2007) considers the extent of evidence for PALS to be small in the improvement of reading achievement, but recognizes that there are positive effects. The reading activity must be geared to the level of the students. For example, Fuchs & Fuchs (2007) found that Grade 1 reading comprehension in pairs was not successful; some students had underdeveloped word skills that limited their reading comprehension. However, PALS has the advantage of being a no-cost, immediate intervention that is carried out in the regular classroom; the gains from PALS are not restricted to low-achieving readers, but are seen in readers at all skill levels.

Go to our accompanying website or DVD-ROM for link to this document:

Differentiated reading instruction: Small group alternative lesson structures for all students (Kosanovich, Ladinsky, Nelson & Torgeson n.d.

Differentiated instruction

Matching instruction to the needs of different students through differentiated instruction within the regular classroom is another method of low-cost intervention. The FCRR (2008) recommends differentiated instruction as a method of intervention, planned and delivered with precision in small flexible ability groups of students, and taking place in the regular classroom.

Differentiated instruction involves organizing the classroom into small groups in order to teach skills based on students' needs. An integrated array of increasingly individualized, intensive, and effective interventions is provided within the classroom. This offers students opportunities for assisted reading practice, re-reading, and extra help.

Careful monitoring of student progress is needed to adjust teaching to students' needs. For example, to teach phonics, the teacher must have background knowledge that includes alternative ways for teaching phonics skills when children have difficulty.

Not only does differentiated instruction provide students with appropriate instruction for their individual needs, but it also controls the costs associated with special education. With differentiated instruction, children receive direct and explicit instruction in the early stages of reading skill acquisition, followed by implicit and independent activities when they have acquired basic skills.

Go to our accompanying DVD-ROM or website to view a video clip of a Kindergarten classroom where the teacher puts differentiated instruction into practice.

[Video 23]

Differentiated Instruction for Writing.

Reading Rockets describes how to use differentiated instruction for writing. Go to our companion website or DVD-ROM for the link.

What have I learned about methods of intervention?

Formats or contexts to use for instructing skills

In teaching reading, various contexts or formats (i.e., ways of arranging the lesson) are frequently used. Two common contexts used to teach reading skills are referred to as "shared reading" and "guided reading". These are considered formats or contexts in which to teach the reading skills, however, they are not methods of instruction.

Shared and guided reading are contexts not merely for teaching children advanced skills (e.g., comprehension), but also for the foundation skills (e.g., decoding).

Go to our accompanying DVD-ROM or website to view a video clip on classroom use of shared and dialogic reading.

[Video 24]

Shared reading

In Kindergarten, the teacher may want to read a story aloud to children and, with a finger, follow along with the words as the students listen and watch. Evans, Williamson, and Pursoo (2008) found that if the teacher pointed to the words as he or she read aloud, the children's print recognition improved as they watched. The students should not be asked to "read" the story aloud with the teacher because, as Hu (2005) points out, for this to be a true reading experience, the students would need to have the tools to "decode" the words they are reading. The use of shared reading can be a way of having the children listen to and watch the story more actively as the teacher reads.

The "big book" used in this context should be carefully chosen with a format and text that fits the goal of instruction. For example, teachers may want to select a book that illustrates rhyming words or that discusses decoding strategies. Teachers can also discuss how a book is organized within this context (e.g., table of contents, title page, index, glossary).

In Kindergarten and Grade 1, shared reading could be used as a context for a lesson on phonological awareness through big print rhymes, songs, and words with patterns.

Several types of books can be useful for teaching decoding skills in shared reading contexts. Try using:

- Rhythmic books (e.g., "Goodnight Moon")
- Two-part books (e.g., "Brown Bear, Brown Bear, What do You See?")
- Cumulative books (e.g., "The House that Jack Built")
- Repetitive books (e.g., "The Three Little Pigs")

The shared reading context could be "dialogic" reading (i.e., reading and engaging in dialogue). This does not necessarily involve using a "big" book; a regular reading aloud context can be used. The lesson through "dialogue" can include modelling meta-cognitive strategies, exposing students to vocabulary they cannot yet decode, discussing words, and involving students in thinking about the story (Gormley & Ruhl, 2005). Dialogic reading is discussed further in the section on parental involvement (p. 105).

Go to our accompanying DVD-ROM or website to watch a classroom demonstration of a shared group writing process in a Kindergarten class.

[Video 25]

Guided reading

Guided reading is typically used in classrooms to discuss meaning at the comprehension level rather than building on specific foundation word analysis skills. It can be a means of showing students the strategies for searching text for meaning and achieving comprehension. However, at a beginning reader level, it is the decoding skills that need to be practiced. Focus in this important practice needs to be placed on sounding out decodable words. The FCRR (2008) states that many of the "levelled books" currently used in guided reading lessons do not provide good support for instruction that emphasizes explicit development of foundation skills for reading.

Care is needed to select texts that are integrated into the sequential development of phonics and spelling instruction. Guided reading texts should be selected based on the students' ability to decode the text. Children should be able to decode the text with 90 to 95 percent accuracy; a decoding level of less than 90 percent is considered to be a frustrational level for students (Kimbell-Lopez, 2003).

As above, guided reading provides a context for learning, but is not the lesson. The actual teaching of decoding skills, particularly to students who are struggling and have fundamental knowledge gaps, requires focused and systematic instruction, which is difficult to carry out in the context of guided reading (FCRR, 2008).

Go to our accompanying DVD-ROM or website to view a video of a Kindergarten class using guided reading to help discuss parts of the book and decoding words.

[Video 26]

The North Vancouver School District 44 has developed a program called Reading 44, which, with ongoing professional development, illustrates how to use guided reading as a context for helping readers.

Go to our accompanying website or DVD-ROM for links to video clips that illustrate how the teacher uses guided reading for older students to focus on searches in the text for meaning.

Computer-assisted learning

Computer technology can assist teachers in reading instruction by providing students with opportunities for individual practice and increasing their interest. It should be noted that computers are intended to assist and supplement teaching and not to replace it. Blok, Oostdam, Otter, and Overmaat (2002) found that computer-assisted instruction helped in supporting the development of early reading skills in beginning readers. However, they agreed with the implications presented in the National Reading Panel report (2000) that the use of computers with literacy instruction requires further exploration.

Computers offer a change of pace from regular teacher-led or group instruction. Kamil, Intrator, and Kim (2000) found that computer-assisted learning promotes intrinsic motivation, primarily if the program allows the student to customize his or her work and choose to work at a more challenging level. Another study by Gambrell (2006) showed that the Internet can also be motivating for early readers because it offers a large variety of texts to read. Technology in the classroom provides an opportunity for student engagement and an "electronic scaffolding" to learning (McKenna, 1998).

Computer-assisted reading and writing programs are interactive and allow students to progress at their own pace; students can also work with these programs individually or in a group. Computer programs typically provide immediate feedback about whether or not the student's answer is correct. If the answer is not correct, the program should show the student how to correctly answer the question, and may also show why the answer is correct and the others are incorrect. Computer-assisted instruction moves at the students' pace, and usually does not move ahead until they have mastered the skill (see The Access Center, 2008b).

Resource: Willoughby, T., & Wood, E. (Eds.) (2008). Children's learning in a digital world.

Go to our accompanying DVD-ROM or website to watch a group of video clips about how computer technology can enhance learning reading and writing and can also help students with reading impairments.

[Video 27]

Dalton and Strangman (2006) warn that online literacy tools and electronic reading and writing programs are not "one size fits all" and they should be carefully selected. Carefully selected computer programs can give students additional practice in skills such as phonological awareness, phonics, spelling, vocabulary, and fluency. Children can experience growth in the skills targeted by the programs (Lonigan et al., 2003). Rineking, Labbo, & McKenna (2000) found that computer programs that expose students to new vocabulary can have a positive effect on students' reading confidence in attempting to pronounce challenging words.

For links to ABRACADABRA software and background information, visit our accompanying website or DVD-ROM.

Go to our accompanying DVD-ROM or website to view video clips about how ABRACADABRA was developed and how it can be used in differentiated instruction

[Video 28]

The formal use of computers in instructing early reading in elementary classrooms has been well researched and explored in the development of DVD-ROM based software (e.g., Alphie's Alley) and a web-based software (e.g., ABRACADABRA) through the Centre for the Study of Learning and Performance (CSLP) at Concordia University (Abrami, Savage, Wade, Hipps, & Lopez, 2008). They are highly interactive and take a balanced reading approach. The ABRACADABRA program also offers professional development training for teachers, research-based literacy activities, digital stories, assessment capabilities, and a communication tool.

For a video clip on how to use Alphie's Alley in teamwork activities in the classroom, visit our accompanying DVD-ROM or website.

What have I learned about how to use contexts for teaching reading and writing?

Parental and guardian involvement: developing a good home-school relationship

Parents and teachers may look at a young child's learning from different perspectives. However, they share the common goal of wanting to provide that child with the best possible education. Mutual respect and communication between teachers and families gives a voice to both parties and provides the kind of care and education that will help the child thrive. Today's family members and caregivers have many responsibilities and time constraints. It takes extra effort on the part of both teachers and parents to build strong partnerships that will benefit the child.

Go to our accompanying website for a link to ideas to give parents, from: Put reading first: Helping your child learn to read, a parent guide, preschool through Grade 3. By The Partnership for Reading.

http://foundationsforliteracy.ca

Matt Anderson is a new Kindergarten teacher and is having a hard time keeping up with all the demands as a first-year teacher. When he expressed this concern to his peers, they suggested getting parents involved. He took their advice and contacted several parents of students in his class. Happily, they were all willing to help. Matt's stress has been reduced and the learning levels in his classroom have risen, the children seem to be "getting it" faster.

There is another reason why Matt asked parents to come in and help. While the parents are helping in the classroom, they are also learning how to support their own children effectively, even when they are not in the classroom. Matt knows that parents can be effective teachers, and even more effective when they know ways to support literacy.

The students whose parents learned how to be more involved in literacy education learned more easily and moved ahead through the stages of literacy more quickly.

How would you communicate with the parents and guardians of your students?

Evidence that parent/guardian involvement is effective

Although there have been several conflicting reviews on parent involvement, most studies show that it is associated with positive gains in student achievement (Bempechat, 1992; Zellman & Waterman, 1998). Many studies suggest that parents of elementary school aged children can help them learn to read and can provide a nurturing environment that promotes literacy development (Fan & Chen, 2001; Gest, Freeman, Domitrovich, & Welsh, 2004; Mullis, Mullis, Corneille, Ritchson, & Sullender, 2004; Sénéchal & LeFevre, 2002).

Go to our accompanying DVD-ROM or website to view a video clip on the importance of the role of parents.

[Video 29]

A study by Bus (2001) showed that parents' attitudes towards reading affect their children; when parents find reading enjoyable, their children are also likely to have an interest in reading.

SEDL (2008) reviewed several articles and programs and found overwhelming evidence that parent involvement makes a positive difference in children's academic achievement. When parents talk to their children about school, expect them to do well, help them plan for college, and make sure that out-of-school activities are constructive, their children perform better in school (Henderson & Mapp, 2002).

Sénéchal and LeFevre (2002) showed that reading to a child both at home and at school results in the child having a larger vocabulary and better reading comprehension by Grade 3. Bailey (2006) examined students who were economically at-risk but who were successful early readers in order to determine factors that influence their early reading success. The conclusion was that for this specific group, frequent parent reading influenced the children's early reading.

"Children cannot become literate alone [...] Although most parents recognize that they are their children's first teachers, some consider literacy to be something children develop in school."

See page 11 for an example (McVicker, 2007)

Importance of training parents

Sénéchal (2006) conducted a meta-analytic study for National Institute for Literacy (NIFL) and found that training parents to teach their child specific reading skills can result in a significant improvement in children's reading performance. Toomey (1993) found that reading programs that involved "explicit parent training" (i.e., involving proper modelling and guided practice) were the most successful in improving reading performance.

What can teachers do?

SEDL (2008) identifies several research-based methods and strategies that teachers can implement to support parent involvement, as listed below. Note that many of the tips focus on positive interactions between both parties.

- Recognize that all parents, regardless of income, education, or cultural background, are involved in their children's learning and want their children to succeed.
- Design programs that will support families to guide their child's learning.
- Link efforts to engage families, whether based at school or in the community, in student learning.
- Focus efforts on engaging families and community members, to develop trusting and respectful relationships.
- Embrace a philosophy of partnership and mutual respect and be willing to share power with families. Make sure that all parties understand that the responsibility for children's educational development is a collaborative enterprise.

Maintaining a relationship with the parent(s)/guardian(s) of students can be effective in many ways. Some teachers provide weekly newsletters to parents to inform them of class events (e.g., via paper or email), other teachers have made handouts for parents with sample home activities they can complete to enrich their child's educational experience. Newsletters can also include suggested texts to read with their child to support literacy development. This information encourages parents to accept the challenge of supporting their child's emerging literacy through home activities (McVicker, 2007). The following is an example of an appropriate newsletter for parents of Kindergarten students.

The Reading Newsletter!

Dear Parents and Guardians,

Did you know that reading with your child at home will increase his or her ability to read and understand text that he or she encounters at school?

Here are a few tips for when you are reading with your child:

- Pause in between phrases and allow time to reflect on the material.
- Let your child "tell" the story, even if he or she is not reading what is written.
- Be involved in a conversation while reading the story; ask your child open-ended "What" questions. Ask anything to which you can to get more than a one-word answer.
- Have your child predict what will happen.

Give these strategies a try!

(Adapted from FCRR, 2008)

Dialogic reading

Dialogic reading involves encouraging a dialogue as a story is read by pausing during the reading, referring to illustrations, and evoking a conversation about the book, letters, and pictures. This is an effective reading strategy for both teachers and parents.

Whitehurst, Arnold, Epstein, and Angell (1994) found that "dialogic reading" (i.e., making reading a form of dialogue or two-way conversation) is an effective reading strategy for early readers since it engages the child in thinking about the story as it is read. The strategy can be even more effective if parents involve their children in dialogic reading at home. Evidence shows that parents who ask clarifying and thought-provoking questions as they read have children who ask more questions, talk more, and participate more frequently in conversation (DeTemple, 2001).

The American Library Association (2007) encourages asking "what questions" while reading with children (e.g., point to a tree and ask, "What is this?" or "What colour is this?"). Parents and teachers are encouraged to praise correct responses, and provide support when needed. Once the simple "what questions" have been exhausted, asking the child open-ended questions is recommended (e.g., "What do you see on this page?" or "What's going on in this picture?"). It is recommended that parents and teachers ask questions that facilitate longer answers, rather than simple questions that require a one-word response.

What have I learned about the role of parents and about how to involve parents?

SUMMARY

Summary of effective reading and writing instruction

This section emphasized the importance of effective instruction in reading and writing. One essential element is the motivation and engagement of the teacher, which fosters the same positive response in students. A second key element to effective instruction is that it should be systematic and explicit. Important aspects of instruction include the use of scaffolding, modelling good meta-cognitive strategies, and the use of a variety of methods such as reciprocal teaching. Another critical element to effective instruction is the use of regular assessment, including screening and progress monitoring. Once assessments are completed and students in need of extra help are identified, another important element to effective instruction is the knowledge of how to implement a successful intervention. In addition, the teacher must differentiate the instruction method and intervention plan so that it is the most beneficial for each student. Finally, an effective teacher recognizes the importance of involving the parents and creates a strong partnership leading to optimal learning for each child.

Special Populations

Canadian teachers encounter great diversity of learners in their classrooms. Below, three such populations are discussed: English language learners (ELL), learners from low socio-economic status (SES), and learners with reading impairments (such as dyslexia).

Do these groups have special needs for learning reading and writing? The following sections present research findings about the needs of these populations, and discuss implications for classroom practice.

English language learners

Researchers in North America have conducted extensive research on English language learners (ELL). In this resource kit, the focus will be on the Canadian research as the makeup of ELL students in Canada is very different from that in the United States, where a large proportion of ELL are Hispanic. According to the 2006 Statistics Canada census, the five most common languages spoken by Canadians aged birth to 19 whose first language is other than English or French are Chinese, Punjabi, Spanish, Italian, and Arabic (Statistics Canada, 2007).

Go to our accompanying DVD-ROM or website to view a group of video clips on evidence about ELL students learning to read and write.

[Video 30]

Study findings and implications for practice

- In a recent study by Geva and Yaghoub Zadeh (2006), Grade 2 English as a second language (ESL) and English as a first language (EL1) children resembled each other on word and text reading efficiency. With the exception of English-language oral proficiency skills, EL1 and ESL profiles were highly similar. The group of children with poor decoding skills consisted of the same percentage of EL1 and of ESL students.
- Large numbers of ESL and EL1 students followed from Kindergarten through Grades 2, 3, and 4 in three separate longitudinal studies showed few differences in decoding ability by Grade 4. The Grade 4 word reading ability was predicted by the same Kindergarten tasks for both language groups. Moreover, EL1 and ESL learners showed the same range of abilities. This suggests that early identification models for EL1 speakers are also appropriate and beneficial for ESL students (Lesaux & Siegel, 2003; Lesaux, Rupp, & Siegel, 2007; Lipka & Siegel, 2007).

- For ESL students, letter identification and phonological processing were the most significant predictors of Grade 3 reading ability. The implications of this finding are that letter knowledge, phonemic awareness, and alphabetic principle are significant factors for success in reading (Lipka & Siegel, 2007).
- Similar proportions of ESL and EL1 speakers are classified as poor readers. Both groups demonstrate difficulties with phonological awareness and working memory. These findings suggest that underlying processing deficits, such as cognitive-linguistic development, are the primary issue for students experiencing word-level difficulties (August & Shanahan, 2006).
- When young ESL students are having problems in developing reading efficiency, even with simple materials, this should not be automatically attributed to their lack of oral language proficiency. They may benefit from an intervention that focuses on efficient word-recognition skills (Geva & Yaghoub Zadeh, 2006).
- Although ESL students perform as well as EL1 students in the foundation skills of decoding and word reading, they do not perform as well on provincial exams. They may not have the same level of vocabulary or the same level of linguistic knowledge (i.e., knowledge of English language). They may need extra assistance in the oral and higher level skills such as oral vocabulary building, grammar, and comprehension. The amount and type of help required may depend on their language background.

Evidence shows that parents of ELL students should be encouraged to use their native language at home. Watch the video clips on our accompanying DVD-ROM or website [Video 31]

Learners from low socio-economic status

Many children from low socio-economic status (SES) enter school lacking the experience needed to prepare them for reading and writing.

Study findings and implications for practice

- Among low SES children, nurturing reading by the prime caregiver makes a significant contribution to a growth in their reading achievement (Merlo, Bowman, & Barnett, 2007). This study indicates the importance of teachers' establishing a relationship with parents. Communication between parents and teachers can help parents to understand how they can nurture their child's reading at home (see p. 102 for details).

- A study of reading skills that followed 1,108 students in 30 schools in one North Vancouver school district from Kindergarten through Grade 5 showed the advantages of an early literacy support program. The students coming from low SES receiving the early literacy support not only improved in reading ability but also in overall educational achievement (D'Angiulli, Siegel, & Maggi, 2004).
- A model of instruction designed to prevent reading problems was studied in schools with large numbers of children from low SES backgrounds. Screening on entry, noticing areas of difficulty, and bringing students up to speed with extra support often prevented a need for more intensive intervention (Bursuck et al., 2004).

Learners with reading impairments

The focus of this resource is teaching reading to typically achieving students, and identifying at-risk students and intervening early.

Study findings and implications for practice

- Early identification and effective intervention with high quality instruction can prevent reading disabilities; therefore, the need to label a child as reading disabled is eliminated (Mathes & Denton, 2002; Lesaux & Siegel, 2003).
- Studies of children with reading difficulties are consistent in suggesting that reading problems in some poor readers may be caused primarily by phonological deficits (Vellutino et al., 1996). However, other cognitive deficits may also be present.
- The ability to connect language sounds to print letters is essential for reading success. Lack of both phonemic and phonological awareness, as well as poor single word naming fluency, are all indicators that the child is at high risk for a decoding impairment (Lovett & Barron, 2006; Hoeft et al., 2007).

Dyslexia

Dyslexia is a specific type of language-based learning disability that is the most common cause of reading and writing difficulty. It is an inherited condition that is neurological in origin and that affects individuals throughout their lives. Dyslexia hinders the acquisition of reading and writing skills (e.g., learning the alphabet). The following statement of International Dyslexia Association (2008) agrees with study findings (Mathes & Denton, 2002; Lesaux & Siegel, 2003):

If children who are dyslexic get effective phonological training in Kindergarten and Grade 1, they will have significantly fewer problems in learning to read at grade level than children who are not identified or helped until Grade 3.

The following is the definition of dyslexia adopted in 2002 by the International Dyslexia Association and by the National Institute of Child Health and Human Development (NICHD).

"Dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge."

There are several misconceptions about dyslexia:

- Dyslexia is not a result of low intelligence. Learning aptitude is normal and often high; achievement lags behind.
- The problem is not behavioural, psychological, motivational, or social. However, problems in these areas may develop as side effects to language difficulties.
- It is not due to a developmental or physical disability.
- Students with dyslexia do not "see backward." The common reversal of letters (e.g., "b" and "d") is based on the lack of connection of speech to letters.

(Based on information from The International Dyslexia Association Ontario Branch, 2008)

Possible signs of dyslexia may be noticed as early as the preschool years. A teacher may also notice difficulties early in the school year. The following is a list of some possible signs of dyslexia.

Oral language

- Delayed spoken language
- Misinterpretation of language that is heard
- Lack of awareness of different sounds in words and rhymes
- Difficulty in organizing thoughts

Go to our accompanying CD-ROM or website to view a group of video clips that explain dyslexia.

[Video 32]

Reading

- Difficulty learning connection between sounds and letters
- Difficulty separating out words into sounds
- Slow and inaccurate reading (confusion of visibly similar words)
- Poor reading comprehension

Writing

- Poor organization of ideas
- Poor spelling (reversals of words such as "tip" for "pit"; confusion of small words such as "at" and "to")
- Poor letter formation and spatial organization (reversals of letters such as "d" for "b")

(Adapted from The International Dyslexia Association Ontario Branch, 2008)

Go to our accompanying DVD-ROM or website to view a new website created by British Columbia's Knowledge Network, entitled "Deciphering Dyslexia"

With proper diagnosis, appropriate instruction, and much support and practice, many of these problems can be overcome. This will influence the child's success in school and later on in life.

Most students with dyslexia have problems identifying separate speech sounds within a word as well as learning how letters represent sounds. These skills are key foundations for learning to read and write; therefore, early identification of problems through assessment as well as early intervention are critical. Inadequate word identification is due to poor decoding skills, which in turn may be a result of lack of phonological skills (Vellutino, Fletcher, Snowling, & Scanlon, 2004). Early screening assessments will indicate whether the child is at risk for reading failure and in need of additional intervention; however, at the beginning of Grade 1, it is difficult to identify whether reading difficulties are due to a specific deficit or simply lack of exposure to print. Regardless of the child's starting point, all students can benefit from high quality instruction focused on phonics. An end of year assessment will show the usefulness of these teaching methods and can identify whether a more focused intervention is needed.

Structured, systematic, and explicit teaching, with structured practice and immediate, corrective feedback is important in teaching all students, and is especially important in teaching students with dyslexia. For example, students with dyslexia need to be taught the sound-letter relationship of all words, and often confuse "sight" words (e.g., "at, the"). These students need more practice and instruction in the correct, step-by-step formation of letters (e.g., the stick first and then the curve for the "b" and the curve first and the stick for the "d"). In other words, dyslexia is not due to either lack of intelligence or desire to learn; with appropriate teaching methods, students with dyslexia can learn.

Techniques used in special interventions for students with dyslexia can benefit almost all children learning the foundation skills for reading (Henry, 2003). In these special interventions, teaching is multisensory, using visual, auditory, and kinesthetic-tactile approaches to link sound, letters, and letter formation. As shown earlier in this kit (see connecting sounds to print section on p. 39), research has found that teaching sounds and letters in language simultaneously achieves better results. This research is reinforced by the successes of the multisensory approach.

Such findings have important implications for regular classroom reading instruction.

What have I learned about teaching reading and writing to special populations?

French immersion students

Teachers should be aware of the existence of French immersion programs in Canada. A large group of English-speaking students in Canada is studying French as a second language in these programs. These students are learning to read and write in a second language and might need further assistance.

Study findings and implications for practice

Most studies of French immersion students have been completed in parts of Canada where the dominant language is not French. Some areas of Canada have a predominance of French (e.g., Quebec and New Brunswick); in those areas, French immersion students have ambient exposure (e.g., street signs, conversations) outside of the school environment, which affects their learning to read French in school. This difference in exposure means conclusions from research into French immersion cannot be generalized to the whole country.

- English-speaking French immersion students continue to demonstrate levels of reading and writing ability in English that are at their grade level and are comparable to those of English-speaking students in regular programs. As for their reading and writing ability in French, the lack of background knowledge, oral vocabulary and knowledge of language structure in French limits immersion students. Evidence from studies of students having difficulty in reading (Rousseau, 1999; Bournot-Trites, 2004) indicates that effective interventions for second language learners with reading difficulties will incorporate many of the best practices of interventions for first language readers with difficulty. However, it is likely that second language readers will have additional challenges associated with their incomplete acquisition of, and limited exposure to, the second language.
- Students who are likely to have difficulty learning to read will have this difficulty in both a first or second language. This implies that students who might be at risk for reading impairment in French could be identified using available assessments and predictors in English (Genesee, 2007; MacCoubrey, Wade-Woolley, Klinger, & Kirby, 2004).

Further research is being completed on whether English-speaking children who are at risk for reading difficulties are disadvantaged by learning to read first in French.

Go to our accompanying DVD-ROM or website to watch a group of video clips on research findings about the needs of students in French immersion.

[Video 33]

What have I learned about teaching reading and writing to French immersion students?

SUMMARY

Summary of reading and writing needs in special populations

This section has discussed briefly some of the special populations of learners that many teachers will encounter in their career. This includes students who are English language learners, students who come from a family with lower socioeconomic status, and students with reading impairments. These groups of children need to be identified early and receive appropriate interventions in order to target the unique needs of each child. Finally, teachers of students learning to read and write in French immersion programs need to be aware that these students have the same challenges as any other students when it comes to reading and writing.

Implications for practice

Recent trends among education professionals and researchers support a mixture of approaches to reading instruction. Education professionals have suggested that an effective combination of approaches should include emphasis on phonics skills, exposure to literature, opportunities to practice, and frequent use of writing activities.

Important themes

- Becoming a knowledgeable and informed teacher
- Providing quality instruction
- Identifying at-risk students immediately and implementing effective interventions or providing extra assistance
- Providing differentiated instruction in small groups
- Emphasizing balanced techniques; teaching foundation skills explicitly and systematically
- Providing multiple pathways to learning the foundation skills
- Engaging students so that they enjoy reading for life

We encourage you to reflect upon what you have learned and what this means for your teaching.

Ask yourself about the next steps for you:

Having read the research in this resource, what will I do next?

What should I change or try in my teaching?

How will I apply this knowledge in my classroom?

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Library access at faculties of education

(Canadian universities and colleges)

Alberta

University/College	Access Information
Concordia University College of Alberta Library 780-479-9338 http://concordia.ab.ca/	On campus access to databases Alumni library access: free Community Borrower's Card: $50 for three months
King's University College Library 780-465-8304 http://www.kingsu.ca/library	On campus access to databases Alumni library access: $10 per year Community Borrower's Card: $25 per year
University of Alberta Library 780-465-8304 http://www.library.ualberta.ca/	On campus access to databases Alumni library access: $30 per year (or free with TAL card) Community Borrower's Card: $25 for four months Education Library: 780-492-4566
University of Calgary Library 403-220-8895 http://library.ucalgary.ca/	On campus access to databases Alumni library access: free with TAL card Community Borrower's Card: free with TAL card Education Library: 403-220-3848 http://www.educ1.ucalgary.ca/doucette/index.shtml
University of Lethbridge Library 403-329-2265 http://uleth.ca/lib/	On campus access to databases Alumni library access: $15, or free with TAL card Community Borrower's Card: $30, or free with TAL card

For information on The Council of Prairie and Pacific University Libraries (COPPUL: a consortium of 20 university libraries located in Manitoba, Saskatchewan, Alberta and British Columbia) see http://www.coppul.ca/index.html
For information on province-wide borrowing, see TAL Online: http://www.talonline.ca/searchalberta/index.jsp

British Columbia

University/College	Access Information
Vancouver Island University Library 250-740-3660 http://www.mala.ca/library	On campus access to databases Community Borrower's Card: $25 per year. Curriculum lab in main library includes teaching materials, text books, and lesson aids

Simon Fraser University Burnaby: 778-782-5735 http://www.lib.sfu.ca Surrey: 778-782-7500 http://www.surrey.sfu.ca/	On Campus access to databases Free library access for alumni, Community Borrower's Card is $100 per year Centre for Educational Technologies: 778-782-4129 Centre provides "how to" videos on how to use ERIC and other databases effectively; weekly e-newsletter called "webbits" about new educational materials/sites/programs
Thompson Rivers University 1-800-663-1699 http://www.tru.ca/library/	On campus access to databases Alumni library access: $15 per year Community Borrower's Card: $25 per year
Trinity Western University Library: 604-513-2023 http:www.twu.ca/Library/	On campus access to databases Alumni library access: $15 per year Community Borrower's Card: $60 per year
University of British Columbia Library: 604-822-6375 http://www.library.ubc.ca	On campus access to databases Alumni library access: free with an alumni card Community Borrower's Card: $120 per year
University of Northern British Columbia Library: 250-960-6475 http://library.unbc.ca	On campus access to databases Alumni library access: free with an alumni sticker on student card Community Borrower's Card: $25 per year Local School District (District 57) has free access to the library collection
University of Victoria Library: 250-721-8230 http://gateway.uvic.ca/index.html	On campus access to databases Alumni library access: free with an alumni card Community Borrower's Card: $50 for 3 months

New Brunswick

University/College	Access Information
St. Thomas University Library: 506-453-3546 http://www.lib.unb.ca	On campus access to databases Alumni library access: free with an alumni card Community Borrower's Card: $20 per year
University of New Brunswick Library: 506-453-3546 http://www.lib.unb.ca	On campus access to databases Alumni library access: free with an alumni card Community Borrower's Card: $20 per year

Newfoundland

University/College	Access Information
Memorial University Library: 709-737-7423 http://www.library.mun.ca	See http://www.library.mun.ca/alumni/freearticleindexes.php to see which databases have free remote access Alumni library access: free with an alumni card Community Borrower's Card: $25 for 4 months Curriculum Materials Centre: 709-737-7466 http://www.library.mun.ca/cmc/index.php

Nova Scotia

University/College	Access Information
Acadia University Library: 902-585-1249 http://library.acadiau.ca/	On campus access to databases Alumni library access: free with an alumni card Community Borrower's Card: $20 per year
Mount Saint Vincent University Library: 902-457-6117 http://www.msvu.ca/library/	On campus access to databases Alumni library access: free with an alumni card (no access to Consortium though, pay additional $35 for access) Community Borrower's Card: $35 per year
St. Frances Xavier University Library: 902-867-2242 http://www.stfx.ca/	On campus access to databases Alumni library access: free with an alumni card Community Borrower's Card: free Curriculum Resource Centre: 902-867-2272 http://www.stfx.ca/academic/education/curriculum-resource.htm

Ontario

University/College	Access Information
Brock University Library: 905-688-5550 http://www.brocku.ca/library/	On campus access to databases Alumni library access: free with an alumni card Community Borrower's Card: $40 per year Instructional Resource Centre: 905-688-5550 ext. 3357 http://www.ed.brocku.ca/irc/
Charles Sturt University Library: 905-333-4955 http://www.csu.edu.au/division/library/about/contacts/ontario.html	On campus access to databases (borrowers may pay a fee for off-campus access) Alumni library access: $110 per year Community Borrower's Card: $110 per year
Lakehead University Library: 807-343-8205 http://library.lakeheadu.ca/	On campus access to databases Alumni library access: free Community Borrower's Card: free Education Library: 807-343-8718 http://library.lakeheadu.ca/?pg=163
Laurentian University Library: 705-675-4800 http://www.laurentian.ca/Laurentian/Home/Departments/Library/home.htm	No access to databases Alumni library access: free Community Borrower's Card: $15 per year
Nipissing University Library: 1-800-655-5154 http://www.eclibrary.ca/library/index.php	On campus access to databases Free access with local public library card, otherwise: Alumni library access: $50 per year Community Borrower's Card: $50 per year
Queen's University Library: 1-866-267-7404 http://library.queensu.ca/	On campus access to databases Alumni library access: $25 per year with alumni card Community Borrower's Card: $50 per year Education Library: 1-866-267-7406 http://library.queensu.ca/webedu/ all resources free for teachers to borrow (do not need library card, teachers are issued "teacher's card" for free)

Redeemer College Library: 1-877-779-0913 http://www.redeemer.ca/academics/library	On campus access to databases Alumni library access: free Community Borrower's Card: free Teacher Resource Centre (TERC): 1-877-779-0913 http://www.redeemer.ca/academics/departments/education/facilities.aspx anyone with a valid library card may borrow materials from the TERC
University of Ontario Institute of Technology Library: 905-721-3082 http://www.uoit.ca/EN/library/index.php	On campus access to databases for alumni only Alumni library access: free Community Borrower's Card: n/a Teacher Resource Centre: 905-721-8668 ext. 2004 http://www.uoit.ca/EN/library/main/14016/trc.html Education materials are only for current education students
University of Ottawa Library: 613-562-5883 http://www.biblio.uottawa.ca/index-e.php	On campus access to databases Alumni library access: free with alumni card Community Borrower's Card: free with an Ottawa Public Library card Education Resource Centre: 613-562-5861 http://www.education.uottawa.ca/resourcecentre/
University of Toronto Library: 416-978-8450 http://www.library.utoronto.ca/	On campus access to databases Alumni library access: free with alumni card Community Borrower's Card: $150 per year Faculty of Education Resource Centre: 416-978-1867 http://www.oise.utoronto.ca/ec/ borrowing restricted to current students and faculty
University of Western Ontario Library: 519-661-3162 http://www.lib.uwo.ca	On campus access to databases Alumni library access: free with alumni card Community Borrower's Card: $110 per year Education Library: 519-661-2111 ext. 88275 http://www.lib.uwo.ca/education/
University of Windsor Library: 519-253-3000 ext. 3402 http://www.uwindsor.ca/leddy	On campus access to databases Alumni library access: free with alumni card Community Borrower's Card: $50 per year
York University Library: 416-736-5150 http://www.library.yorku.ca/ccm/jsp/homepage.jsp	On campus access to databases Alumni library access: $25 with alumni card Community Borrower's Card: $100 per year Education Library: 416-736-5259 http://www.yorku.ca/foe/Resources/ERC/index.html borrowing restricted to current students and faculty

For information on the Ontario Council of University Libraries: http://www.ocul.on.ca/

Prince Edward Island

University/College	Access Information
University of Prince Edward Island Library: 902-566-0583 http://www.upei.ca/~library/index.html	On campus access to databases Alumni library access: $10 (one time fee) Community Borrower's Card: $10 (one time fee) Education Resource Centre: 902-566-0727 http://www.upei.ca/education/ed_res_ctr

Quebec

University/College	Access Information
Bishop's University Library: 819-822-9600 http://www.ubishops.ca/library_info/	Remote access to all databases with a library card Alumni library access: free Community Borrower's Card: free
Concordia University Library: 514-848-2424 http://library.concordia.ca/index.php	On campus access to databases Alumni library access: free with alumni card Community Borrower's Card: $50 per year Education Resource Centre: http://doe.concordia.ca/students.php
Université Laval Library: 514-656-3344 http://www.bibl.ulaval.ca/mieux	On campus access to databases Alumni library access: free Community Borrower's Card: different rates
McGill University Library: 514-398-4749 http://www.mcgill.ca/library/	On campus access to databases Alumni library access: $100 per year Community Borrower's Card: $100 per year Education Resource Centre: 514-398-5726
Université de Montréal Library: 514-343-7242 http://www.bib.umontreal.ca	On campus access to databases Alumni library access: free Community Borrower's Card: $100 per 6 months Education Resource Centre: 514-343-6903
Université du Québec : Abitibi-Témiscamingue Library: 1-866-234-3728 ext. 1100 http://www.uqat.ca/bibliotheque/	On campus access to databases Alumni library access: free Community Borrower's Card: $125 per year
Université du Québec : Chicoutimi Library: 418-545-5011 http://bibliotheque.uqac.ca/	On campus access to databases Alumni library access: free Community Borrower's Card: $125 per year
Université du Québec : Montréal Library: 514-987-6174 http://www.bibliotheques.uqam.ca/index.html	On campus access to databases Alumni library access: free Community Borrower's Card: $125 per year Education Library: 514-987-6174
Université du Québec : Outaouais Library: 1-800-567-1283 http://biblio.uqo.ca/	On campus access to databases Alumni library access: free Community Borrower's Card: $125 per year
Université du Québec : Rimouski Library: 1-800-463-4712 http://biblio.uqar.qc.ca/	On campus access to databases Alumni library access: free Community Borrower's Card: $125 per year
Université du Québec : Trois-Rivières Library: 819-376-5005 http://www.uqtr.ca/biblio/	On campus access to databases Alumni library access: free Community Borrower's Card: $125 per year
Université de Sherbrooke Library: 1-866-506-2433 http://www.usherbrooke.ca/biblio	On campus access to databases Alumni library access: free Community Borrower's Card: community cards are not issued

For Quebec Consortium information; http://www.crepuq.qc.ca/

Saskatchewan

University/College	Access Information
University of Regina Library: 306-585-4495 http://www.uregina.ca/library	On campus access to databases Alumni library access: free with alumni card Community Borrower's Card: $25 per year Teacher Preparation Centre: 306-585-4606 http://education.uregina.ca/index.php?q=80.html
University of Saskatchewan Library: 306-966-6005 https://library.usask.ca	On campus access to databases Alumni library access: $35 per year Community Borrower's Card: $150 per year Education Library: 306-966-5973 https://library.usask.ca/education/

Yukon

University/College	Access Information
Yukon College 1-800-661-0504 http://www.yukoncollege.yk.ca/yclibrary/	On campus access to databases Alumni library access: $10 per year Community Borrower's Card: $10 per year

Glossary

A

Affix: A general term that refers to prefixes and suffixes.

Alliteration: The repetition of the initial sound of each word in connected text (e.g., "Harry the happy hippo hula-hoops with Henrietta").

Alphabetic principle: The concept that letters and letter combinations represent individual phonemes (sounds) in written words.

Analogy: A comparison of two sets of information based on a point of similarity. Analogies can be used as vocabulary exercises (e.g., "cat is to kitten as dog is to _____?").

Antonym: A word opposite in meaning to another word.

Assessment: A process used to determine a child's level of ability in different skill domains or the child's progress in these areas. Assessment may be standardized or non-standardized as well as formative or summative.

Automatic word recognition: Effortless identification of words previously learned and stored in one's mental dictionary. Often involves frequently occurring words (e.g. "the, and, to").

Automaticity: A general term that refers to any skilled and complex behaviour that can be performed easily with little attention, effort, or conscious awareness. These behaviours become automatic following extended periods of training. For example, with practice and instruction, students become automatic at word recognition and are able to focus attention on constructing meaning from the text, rather than decoding.

B

Background knowledge: Knowledge a reader possesses based on previous experience (either through reading or through other experiences). The reader can form a connection between this knowledge and the current text.

Base word: A unit of meaning that can stand alone as a whole word (e.g., "friend, pig"), also called a free morpheme. Base words/morphemes are words from which many other words are formed (e.g., the base word "migrate" forms "migration, migrant, immigration, immigrant, migrating, migratory").

Bias: The tendency to give more weight to some factor or situation that supports certain ideas or values, rather than remaining neutral.

Blending: Used during reading to combine the sounds together into a cohesive word (e.g., h-a-t = "hat")."

C

Cipher knowledge: The knowledge of the relationships between English spelling and sound of regular patterns (e.g., knowing "bone" allows the reader to read "cone, stone, phone", but this knowledge does not help with the few irregular pronunciations such as "done" and "gone"). This knowledge is important for fluent decoding and reading.

Cloze task: This task requires a child to fill in the missing word or phrase within a passage using contextual information (e.g., "Row, row, row your boat gently down the ___"). A cloze assessment can be used to test reading comprehension, language comprehension, vocabulary, syntax, and semantics. When the child is given options (multiple choice) from which to select the appropriate word for each blank, the assessment is typically described as a "modified cloze task."

Coarticulation: This is a process found in connected speech in which individual sounds are combined within words. Coarticulation occurs because when we are saying one sound, we begin to form the following sound. Some individual sounds within words become distorted, as they are not produced as isolated units (e.g., "ham": the /m/ blends with the /a/ to distort the vowel). Coarticulation can make it difficult for some children to hear the individual sounds/phonemes in words; therefore, the concept of phonemes needs to be explicitly brought to their attention through instruction.

Cognates: Words that are related to each other by virtue of being derived from a common origin (e.g., "decisive" and "decision").

Comprehension: The ability to understand spoken or written information.

Concepts about print: These include the concepts that a text contains a message, that text flows from left to right and from top to bottom, and that individual words on the page correspond to individual spoken words. Understanding this structure of written English is a prerequisite to good decoding skills.

Connected text: Words that are linked (not isolated), as found in sentences, phrases, and paragraphs.

Consonant blend: Two or more consecutive consonants that retain their individual sounds (e.g., /bl/ in "block"; /str/ in "string"). May also be referred to as a consonant cluster.

Context clue: Information in the surrounding text that can help to clarify meaning of an unfamiliar word.

Correlation: The measure or extent to which two or more outcomes are related to each other (e.g., phonological awareness and reading ability).

Creative writing: Writing which incorporates children's original thinking and feeling, stimulated by experience and imagination.

Cumulative instruction: Instruction that builds upon previously learned concepts.

D

Decodable text: Text in which a high proportion of words (80-90 percent) comprise sound-symbol relationships that have already been taught. It is used for the purpose of providing practice with specific decoding skills and is a bridge between learning phonics and the application of phonics in independent reading.

Decodable words: Words that contain phonic elements that were previously taught.

Decoding: The ability to translate print to speech sounds by employing knowledge of sound symbol correspondences; also the act of deciphering a new word by sounding it out.

Descriptive writing/expository writing: A formal writing style that serves to explain; utilizes several specifics structures; and always uses a topic sentence. Content may be nonfiction or fiction.

Diagnostic: A type of test administered by a specialist, and used to determine a child's specific abilities and deficits in a variety of areas such as reading, language, speech, or cognitive skills. Such tests will usually be given only if a child fails to make adequate progress after being given extra help in learning to read.

Dialogic reading: During story reading, the teacher/parent asks questions, adds information, and prompts the child to increase the sophistication of responses by expanding on his/her utterances.

Differentiated instruction: When the teacher matches the instruction to meet the different needs of all the learners in the classroom.

Digraphs: A group of two consecutive letters whose phonetic value is a single sound (e.g., /ea/ in "bread"; /ch/ in "chat"; /ng/ in "sing").

Diphthong: A vowel sound produced by the tongue shifting position during articulation; a vowel that feels as if it has two parts. The following are examples of diphthongs in English: ow (as in "low"), ou (as in "loud"), oi (as in "coin"), ie (as in "tie").

Direct instruction: The teacher defines and teaches a concept, guides students through its application, and arranges for extended guided practice until mastery is achieved.

Direct vocabulary instruction: Planned instruction to pre-teach new, important, and difficult words to ensure the quantity and quality of exposures to words that students will encounter in their reading.

Dyslexia: A language-based learning disability. Dyslexia is often referred to as a specific reading disorder and includes difficulties in fluent or correct word recognition, decoding, and spelling. It is thought to result from poor phonological awareness skills that are unexpected in comparison to the rest of the child's abilities.

E

Encode: The mental conversion of signals or information into stored nerve impulses. Also, the psychological transformation of one message or image into another (e.g., oral language into writing, ideas into words).

EL1: English as a first language.

ELL: English language learners, students whose first language is not English and who are in the process of learning English.

ESL: English as a Second Language, a term used in Canada for the instruction of ELL students in use of English language.

Emergent literacy: The skills, knowledge, and attitudes that precede and help to develop conventional reading and writing (e.g., pretend "reading" books, playing with words and sounds, beginning to recognize words that rhyme, scribbling with crayons, pointing out logos or street signs, and naming some letters of the alphabet).

Empirical research: Refers to scientifically based research that applies rigorous, systematic, and objective procedures to obtain valid knowledge that can be generalized. This type of research draws on observation or experiment and has been accepted by a peer-reviewed journal or approved by an independent panel that conducts a comparable, objective scientific review.

Error correction: Immediate corrective feedback during reading instruction.

Explicit instruction: Involves a high level of teacher/ student interaction in which the teacher provides clear, unambiguous, direct, and visible explanations to the students. These explanations are concise, specific, and related to the objective.

Expository text: Reports factual information (also referred to as informational text) and presents ideas; uses definition, categorization, comparison-contrast, enumeration, sequencing, problem-solution, description, or cause-effect as techniques.

Evidence-based research: This type of research meets evidence standards. It is empirical research conducted by scientific method with an analysis of results; the highest levels of research have random samples, large samples, and control groups. In the field of education, such studies are of replicable educational interventions (programs, products, practices, and policies) that intend to improve student outcome.

F

Five pillars of reading instruction: See phonological awareness, alphabetic principle, fluency, vocabulary, and comprehension.

Fluency: The ability to read text quickly, accurately, and with proper expression. Fluency provides a bridge between word recognition and comprehension.

Fluency probe: An assessment for measuring fluency, usually a timed oral reading passage at the student's instructional reading level.

Formal assessment: Involves the use of standardized tests that follow a prescribed format for administration and scoring. Scores obtained from formal tests are standardized. They are determined based on a comparative sample of children; therefore scores obtained in formal assessments indicate how a child is doing in comparison to a group of peers.

Frustrational reading level: The level difficulty within a text at which a reader reads with less than 90 percent accuracy (i.e., more than one error per 10 words read).

G

Grapheme: A letter or letter combination that represents a single phoneme (e.g., "s, c, ss, sw, ps, sc" all represent the same phoneme /s/).

Graphic and semantic organizers: Graphic organizers summarize concepts in a text using diagrams, maps, graphs, charts, frames, or clusters. Semantic organizers are graphic organizers using words, with a central concept connected by lines to a variety of related ideas and events.

Guided oral reading: As students read a passage orally, the teacher offers immeidate corrective feedback and additional modelling if necessary. .

Guided practice: Students practice newly learned skills while the teacher provides prompts and feedback.

Guided reading: A relatively short, highly intense instructional episode in which the teacher coaches and observes a group of students practicing reading aloud, and intervenes to guide as needed. Students are taught to become increasingly more strategic, self-monitoring, comprehending readers.

H

High frequency words: A small group of words (300-500) that account for a large percentage of the words in print. These words can be referred to as, "sight words," since automatic recognition of these words is required for fluent reading (e.g., "the, and, they, said").

Homograph: Words that are spelled the same but have different meanings and may or may not have the same pronunciation (e.g., "can" as in "metal container" and "can" as in "able to").

Homonym: This is an umbrella term that encompasses both homographs and homophones.

Homophone: Words that sound the same, but are spelled differently and have different meanings (e.g., "ate/eight"; "they're/their/ there").

I

Idiom: A phrase or expression in which the meaning cannot be determined based on the literal interpretation of the words (e.g., "it's raining cats and dogs").

Immediate corrective feedback: When the teacher immediately attends to a student's error by providing correction and increasing intensity of direct instruction until student demonstrates understanding.

Immediate intensive intervention: Instruction that may include more time, more opportunities for student practice, more teacher feedback, smaller group size, and different materials. It is implemented as soon as assessment indicates that students are not making adequate progress in reading.

Implicit instruction: Students discover skills and concepts on their own instead of being taught these skills explicitly. For example, the teacher provides a list of words that begin with the letter "m" ("mud, milk, meal, mattress") and then asks the students how the words are similar, rather than telling them that the letter "m" is the beginning letter in all the words.

Independent reading level: The level of difficulty within a text at which a reader can read with 95 percent accuracy (i.e., no more than one error per 20 words read). Independent reading level is a relatively easy text for the reader.

Indirect vocabulary instruction: Acquisition of words learned through independent reading and conversation.

Informal assessment: This type of assessment does not require the use of standardized tests that follow prescribed rules for administration and scoring and that have undergone technical scrutiny for reliability and validity. Informal assessment includes teacher-made tests, end-of-unit tests, and running records.

Informational text: Also referred to as expository text, this term includes non-fiction books that contain facts and information.

Instructional reading level: The level of difficulty within a text at which a reader can read with 90 percent accuracy (i.e., no more than one error per 10 words read). Instructional reading level engages the student in challenging, but manageable text.

Instructional routines: Include the following sequence of steps: explicit instruction, modelling, guided practice; student practice, application, feedback, and generalization.

Interventions: Implementation of a program or extra assistance with the goal of changing or preventing a problem such as poor reading skills.

Tier 1: Occurs in the mainstream classroom. This tier is considered high-quality instruction (usually ~80 percent of students will need Tier 1 interventions).

Tier 2: When school-wide screening or prog¬ress monitoring results indicate a deficit in a spe¬cific area, an appropriate instructional intervention (Tier 2 or more intense) is implemented and progress within that interven¬tion is monitored. Applicable for students falling behind on grade level benchmark skills (usually ~15 percent of students will need Tier 2 interventions).

Tier 3: Special education services for students with intensive needs who are not adequately responding to high-quality in¬terventions in Tier 1 and Tier 2. Deci¬sions about students' specific instructional needs are based in part on a student's lack of responsiveness to effective instruction (usually ~5 percent of students will need Tier 3 interventions).

Intervention program: Provides content for instruction intended for use in differentiated instruction and/or intensive instruction to meet student learning needs in one or more of the specific areas of reading.

Invented spelling: An attempt to spell a word based on a student's knowledge of the spelling system and how it works (e.g., kt for "cat").

K

K-W-L: Stands for What I Know (accessing prior knowledge), What I Want to Know (setting a purpose for reading), and What I Learned (recalling what has been read). This technique used most frequently with expository text to promote comprehension.

L

Letter knowledge: The knowledge that a child possesses about letters, their differences in appearance and their sounds. Familiarity with the letters of the alphabet is important for developing decoding skills.

Letter-sound Correspondence: The matching of a verbally produced sound to its corresponding letter or group of letters.

Lexical knowledge: Knowledge of a word, which means knowing how it is written and how it is pronounced, understanding its meaning, and knowing how to use the word in phrases and sentences.

M

Meta-analysis: A form of statistical analysis that combines the results of many highly qualified research studies that have investigated similar research topics. These analyses are performed to validate conclusions using larger sample sizes and greater empirical evidence.

Meta-cognition: An awareness of one's own thinking processes and how they work. The process of consciously thinking about one's learning or reading while actively engaging in learning or reading.

Meta-cognitive strategies: These are strategies that can be taught to students to help them actively think about and have control over their reading and learning. Such strategies include self-assessment and self-regulation.

Metaphor: A comparison between two nouns without using "like" or as" (e.g., "life is a river").

Modelling: Teacher verbally demonstrates a strategy, skill, or concept that students will be learning (e.g., a comprehension strategy modeling: the teacher says, "I wonder what made James decide to do that…I think I am going to look back at the part of the story where he… to see if I can figure out his reasons").

Morpheme: The smallest meaningful unit of language. A morpheme can be a word ("book, table") or a part of a word such as a prefix or suffix. For example, the word "unsuccessful" contains three morphemes: "un," "success," and "ful".

Morphology: The patterns of how words are formed from prefixes, roots, and suffixes (e.g., "mis-spell-ing"), and how words are related to each other.

Motivation: The psychological process of arousing interest in some activity and the regulation and sustainment of a desire to pursue the activity. One of the main tasks of the educator is to create intrinsic motivation in students by presenting situations that are interesting at different stages of development.

Multisyllabic words: Words with more than one syllable (e.g., computer). A systematic introduction of multisyllabic words should occur throughout a reading program, with the average number of syllables in the words increasing throughout the grades.

N

Narrative text: A story about fictional or real events, which follows a basic standard format. Narratives include a plot, setting, characters, structure (introduction, complication, resolution), and theme.

Negative reinforcement: A behaviour modification technique in which a negative stimuli is removed in order to increase a specified behaviour in the future (e.g., A student receives a bad grade on a test. For the next test, he studies and receives a good grade. Removing the negative stimuli of a bad grade will strengthen his studying behaviour in the future). Note: do not confuse with "punishment".

O

Objectives: Measurable statements detailing the desired accomplishments of a program.

Onset and rime: In a syllable, the onset is the initial consonant or consonants, and the rime is the vowel and any consonants that follow it (e.g., in the word "sat", the onset is "s" and the rime is "at". In the word "flip", the onset is "fl" and the rime is "ip").

Oral language: Spoken language. There are five components of oral language: phonology, morphology, syntax, semantics, and pragmatics.

Orthographic knowledge: The knowledge that sounds within a language are represented by specific letters or symbols.

Orthography: A system for representing the sounds of language by written symbols. This involves correct spelling patterns and rules.

Outcome assessment: An assessment that measures the outcome of a program. It is typically given at the end of the year and used to evaluate the overall effectiveness of a program for all students.

P

Partner/peer reading: Students reading aloud with a partner, taking turns to provide word identification help and feedback. Pairing may be determined by reading abilities (e.g., students with stronger reading skills may be paired with those who have weaker reading skills).

Personification: Giving human qualities, such as emotions, desires, actions, and speech to inanimate objects or abstract notions (e.g., The moonlight danced on the water).

Persuasive writing: A formal writing style in which the writer argues a position for or against a topic and tries to persuade the reader to agree with that position. The position is presented in a biased topic sentence called a thesis statement.

Phoneme: The smallest unit of sound within our language system. A single phoneme has the ability to change the meanings of a word (e.g., changing the first phoneme in "bit" from /b/ to /s/ makes "sit"). English has about 41-44 phonemes. Words can be composed of a single phoneme (e.g., "a" or "oh") or multiple phonemes.

Phoneme manipulation: Adding, deleting, and substituting sounds in words-

- **Phoneme addition:** Adding a phoneme to an existing word (e.g., /t/ + "rain" = "train").
- **Phoneme blending:** Combining phonemes to form a word. (e.g., /c/ /a/ /t/ = "cat").
- **Phoneme categorization:** Grouping words by phonemes (e.g., words beginning with /p/: "pat, pin, pig").
- **Phoneme deletion:** Removal of a phoneme from a word (e.g., "shout" without the /sh/ = "out").
- **Phoneme identification:** Finding a common phoneme in a group of words (e.g., in "dog, dig, den", /d/ is the common phoneme).
- **Phoneme isolation:** Isolating individual sounds in a word (e.g., the first sound in "soup" is /s/).
- **Phoneme segmentation:** Breaking word into its separate sounds, saying each sound (e.g. "trap": /t/ /r/ /a/ /p/ has four sounds).
- **Phoneme substitution:** Substituting one phoneme for another within a word to make a new word. (e.g., "pin": change the /n/ to /g/ and you get "pig").

Phonemic awareness: A subcategory of phonological awareness indicating the awareness of individual phonemes in words.

Phonetics: The study and classification of speech sounds, including their production, transmission, and perception.

Phonics: A form of instruction that teaches students to understand and use the alphabetic principle. Students learn the relationships between phonemes (the sounds in spoken language) and graphemes (the letters that represent those sounds in written language) and use this information to read or decode words.

- **Analogy-based phonics:** Involves teaching students to use parts of words they have already learned in order to read and decode words that are visually similar (e.g., reading "fellow" by analogy to "yellow"). Children may be taught many key words to use for reading new words.
- **Analytic phonics:** Involves teaching students to analyze letter-sound relationships in words they know and to decode unfamiliar words by finding an analogous word in their mental dictionary. Sounds are not pronounced in isolation.
- **Embedded phonics:** Involves teaching students letter-sound relationships during the reading of connected text. The teacher gives explicit instruction on specific letter-sound relationships when it is noticed that a child is struggling to read a particular word. Letter-sound relationships may be initially taught through sight word reading. The learning sequence of letter-sounds is not prescribed, but rather is determined by whatever words are encountered in text.
- **Onset-rime phonics instruction:** Involves teaching students to break single syllable words into separate sounds based on the onset (consonant preceding the vowel) and rime (vowel and following consonants). Students read each part of the word separately and then blend the parts together to say the whole word.
- **Phonics through spelling:** Involves the integration of phonics and spelling by teaching students to segment words into phonemes and then to write letters for each phoneme.
- **Synthetic phonics:** Involves teaching students the sounds of individual letters or letter combinations in isolation before they are introduced to reading. Students learn letter sounds and then "synthesize " or blend the sounds together to pronounce words.
- **Systematic and explicit phonics instruction:** Involves teaching students direct letter-sound relationships (e.g., the letter "p" makes the sound /p/) in an organized, logical sequence. This type of instruction allows students to apply their knowledge of letter-sound relationships to reading as they learn it.

Phonological awareness: An "umbrella" term that is used to refer to the understanding or insight into different sound structures in language. This term encompasses awareness of individual sounds in words (phonemic awareness) as well as of individual words in sentences, syllables, and onset-rime segments.

Phonology: The study of the sound system used in language and its rules for combining sounds and patterns of stress and intonation.

Positive reinforcement: A behaviour modification technique in which positive stimuli (e.g., smile, praise or approval, extra attention) is given in order to increase specific behaviours.

Pragmatics: The rules or conventions governing the use of oral language within a social or situational context.

Prefix: A morpheme that precedes a root word and contributes to or modifies the meaning of the root word (e.g., "re-" in "reprint").

Prior knowledge: Refers to the knowledge and experience that readers bring to the text.

Pronunciation guide: A key or guide consisting of graphic symbols that represent particular speech sounds.

Q

Qualitative research: A subjective form of research that relies on analysis of controlled observations of the researcher. This type of research yields extensive narrative data, which include detailed descriptions of what has been observed.

Quantitative research: An objective form of research that explores situations from which numerical data are obtained and analyzed (e.g., numbers of students; scores on tests; number of vocabulary words retained).

R

Randomized control trial: Studies in which people are allocated at random (by chance alone) to receive one of several interventions. One of those interventions is the standard of comparison, or control, giving researchers a reference point for the efficacy of the specific intervention being evaluated. The control can be a placebo or no intervention at all. Randomized controlled trials seek to measure and compare the outcomes after the participants receive the interventions.

Rapid automatic naming: RAN is a measure of cognitive processing, measured by the rate of naming colours, digits, objects, or letters. This measure is a predictor for fluency of reading.

Reading centres: Special places organized in the classroom for students to work in small groups or pairs, either cooperatively or individually. Students work in centres while the teacher is conducting small group reading instruction. Each centre contains meaningful, purposeful activities that are an extension and reinforcement of what has already been taught by the teacher in reading groups or in a large group. For example, students practice phonics skills at the phonics centre; sort word cards at the vocabulary centre; and read books, listen to taped books, record their reading of a book, and read in pairs at the reading centre.

Reading impairment: Occurs when a child has difficulty mastering one or more aspects of learning to read (e.g., the child lacks phonological awareness). Early identification and effective intervention with high-quality instruction can prevent many reading disabilities.

Reciprocal teaching: In this method, both the student and the teacher are involved in the teaching process. Students learn comprehension skills using strategies: asking questions about the text they are reading, summarizing parts of the text, clarifying words and sentences they don't understand, and predicting what might occur next in the text.

Repeated reading: When a student is required to re-read a text a number of times until he or she is able to read at a predetermined fluency level.

Retelling: When a student is required to recall the content of a text in a coherent, logical way.

Rhyming: Words that have the same ending sounds.

Robust instruction: Instruction that directly explains the meanings of words in an energetic and engaging way and provides thought provoking, playful, and interactive follow-up activities in which students can practice the words.

Root: A morpheme, often of Latin origin, that may or may not be able to stand alone; it is used to form a family of words with related meanings (e.g., "view" is a root word for "preview, review, viewable").

S

Scaffolding: Refers to the support that is given to students in order to facilitate learning. This support may occur as immediate, specific feedback that a teacher offers during student practice (e.g., giving encouragement or cues, breaking the problem down into smaller steps, using a graphic organizer, or providing an example). Scaffolding may be embedded in the features of the instructional design (starting with simpler skills and building progressively to more difficult skills). Providing the student temporary instructional support assists them in achieving what they cannot accomplish alone.

Schema: Refers to an organized outline or knowledge structure that interrelates all of one's knowledge on a specific topic. Prior knowledge and experiences are organized into schemas, and this knowledge influences how the reader comprehends written text.

Schwa: The vowel sound sometimes heard in an unstressed syllable and most often perceived as the sound "uh" (e.g., asleep, banana).

Screening: An informal measurement tool designed to identify those students who are prepared for grade level reading instruction and those who may need extra help in reading.

Sentence Fragment: A grammatically incomplete sentence.

Segmenting: Separating the individual phonemes, or sounds, of a word into discrete units.

Self-monitoring: This is a meta-cognitive process in which students actively think about how they are learning or understanding the material, activities, or reading.

Semantics: This term refers to an individual's knowledge of word meanings.

Shared reading: Occurs when the teacher reads a text to all students, allowing each student visual access to the text.

Sight words: These are words that are recognized immediately and automatically. These words may be phonetically regular (e.g. "if, this, and") or irregular (e.g., "would, said, from, have").

Simile: A comparison of two things using the term "like" or "as" (e.g., as fast as a streak of lightning");

Spelling patterns: Refers to recognizable patterns in words (e.g., digraphs, vowel pairs, word families, and vowel variant spellings).

Standardized test: Tests designed so that the test items and the administration procedures are the same each time the test is administered. The standardization serves two purposes. It assures that the test and its administration remain consistent, so as to be completed in the manner that was shown to be effective, and it permits the comparison of the performance of one group of test takers with another.

Stop sounds: A stop sound is created by stopping the airflow through the vocal tract for an instant, with the lips or the tongue. (i.e., /p/, / b/, /t/, /d/, /k/, /g/).

Story elements: Includes characters, a problem, solutions, themes, settings, and a plot.

Story grammar: The "elements" of the story, including title, author, setting, main characters, conflict and resolution, events, and conclusion. The elements create a structured format for the creation of cohesive and logical narratives.

Story maps: A strategy used to identify and highlight the plot and important elements in a story. The maps provide a visual representation of the beginning, middle, and end of a story. They help students answer the who, where, when, what, why, and how of a story and list the main events.

Strategic learners: While reading, these learners actively make predictions, organize information, and interact with the text. They think about what they are reading in terms of what they already know. They monitor their comprehension by employing strategies that facilitate their understanding.

Strategy instruction: Teaching students about different reading strategies. Students are taught how and when to use strategies, how to identify personally effective strategies, and how to make strategic behaviours a part of their learning.

Structural analysis: A procedure for teaching students how to read words by breaking them up into their prefixes, suffixes, or other meaningful word parts.

Syllable: A segment of a word that contains one vowel sound. The vowel may or may not be preceded and/or followed by a consonant (e.g., "cherry" = cher-ry).

Syllabification: The separation of a word into syllables, whether spoken or written.

Syllable types: There are six types of syllables: closed (followed by a consonant, e.g., "cat, dog"), open (ending in a vowel, e.g., "he, si-lo ") vowel-consonant-e (VCE) (vowel is followed by a consonant and a silent e, e.g., "like, mile-stone"), consonant-l-e (vowel is followed by a consonant and an l and an e, e.g., the second syllable in "can-dle" and "jug-gle"), r-controlled (vowel is followed by an r, e.g., "star, cor-ner"), and vowel pairs (where two vowels together make one sound in the syllable, e.g., "count, rain-bow").

Synonym: Words that have similar meanings (e.g., couch and sofa).

Syntax: The conventions and rules for assembling words into meaningful sentences; syntax varies across languages.

Systematic review: A review of the published literature pertaining to a single research question. Systematic reviews help to synthesize high-quality research results from multiple studies to provide high levels of evidence to answer research questions.

V

Vocabulary: Those words and their meanings that are stored in our mental dictionaries.

W

Word family: Group of words that share a rime (a vowel plus the consonants that follow; e.g., "-ame, -ick, -out").

Word parts: Letters, onsets, rimes, and syllables that, when combined, result in words. The ability to recognize various word parts in multisyllabic words is beneficial in decoding unfamiliar words.

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