Louisa Cook Moats

SPEECH to PRINT

Language Essentials for Teachers

THIRD EDITION

Praise for

Speech To Print: Language Essentials For Teachers, Third Edition

"An essential book. . . . Dr. Moats has done an outstanding job of integrating research and application from the field of literacy. Required reading for teachers as well as for those who prepare them in the colleges of education."

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Professor of Literacy Education, ESL, and
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Former President, The International Dyslexia Association
Professor Emerita, San Jose State University

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The National Comprehensive
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Vanderbilt University–Peabody College
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—Deborah R. Glaser, Ed.D.
LETRS National Trainer
Author, *LETRS Foundations: An Introduction to Language and Literacy*
Next STEPS in Literacy Instruction

Speech to Print
Language Essentials for Teachers
Third Edition

Louisa Cook Moats, Ed.D.
Moats Associates Consulting, Inc.
Sun Valley, Idaho

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A companion workbook, *Speech to Print Workbook: Language Exercises for Teachers, Third Edition* (ISBN: 9781681253336), by Louisa Cook Moats and Bruce L. Rosow, is also available from Paul H. Brookes Publishing Co. (1-800-638-3775; 1-410-337-9580). For more information on the *Speech to Print: Language Essentials for Teachers* materials, go to www.brookespublishing.com/moats.

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About the Author

Louisa Cook Moats, Ed.D., President, Moats Associates Consulting, Inc., Sun Valley, Idaho

Dr. Moats has been a teacher, psychologist, researcher, graduate school faculty member, consultant, and author of many influential scientific journal articles, books, and policy papers on the topics of reading, spelling, language, and teacher preparation. She earned her bachelor of arts degree from Wellesley College, her master's degree at Peabody College of Vanderbilt, and her doctorate in reading and human development from the Harvard Graduate School of Education. She began her professional career as a neuropsychology technician, teacher of students with learning disabilities, curriculum director in a residential school, and education specialist in a hospital learning clinic.

After completing her doctorate, she spent 15 years in private practice as a licensed psychologist in Vermont, specializing in evaluation and consultation with individuals of all ages who experienced learning problems in reading and language. Subsequently, she was employed as the Visiting Scholar in the Sacramento County Office of Education, where she helped obtain a $1 million grant to write teacher training materials for California's reading initiative.

Dr. Moats spent the next 4 years as site director of the National Institute of Child Health and Human Development (NICHD) Early Interventions Project in Washington, D.C. This longitudinal, large-scale project was conducted through a grant to the University of Texas, Houston, under the direction of Barbara Foorman. It investigated the causes and remedies for reading failure in high-poverty urban schools. Evidence from the study strongly supported the value of in-depth training for teachers on the essential components of effective instruction.

During the past two decades, Dr. Moats has focused her efforts on developing courses and workshops for teachers based on her experiences at the Greenwood Institute in Vermont, St. Michael's College in Vermont, the NICHD Early Interventions Project in Washington, D.C., the California Reading Initiative, and Reading First. Those professional development materials are called *LETRS: Language Essentials for Teachers of Reading and Spelling*, published by Voyager Sopris

Learning. Dr. Moats's other publications include, in addition to many journal articles, *Spelling: Development, Disability, and Instruction* (York Press/PRO-ED, 1995); *Straight Talk About Reading: How Parents Can Make a Difference During the Early Years* (with Susan Hall; Contemporary Books, 1999); *Parenting a Struggling Reader: A Guide to Diagnosing and Finding Help for Your Child's Reading Difficulties* (with Susan Hall; Broadway, 2002); and *Basic Facts About Dyslexia and Other Reading Problems* (with Karen Dakin; International Dyslexia Association, 2007). She is also well known for authoring the American Federation of Teachers' (1999) "Teaching Reading *Is* Rocket Science: What Expert Teachers of Reading Should Know and Be Able to Do."

Dr. Moats's awards include the prestigious Samuel T. and June L. Orton award from the International Dyslexia Association for outstanding contributions to the field; the Eminent Researcher Award from Learning Disabilities Australia; and the Benita Blachman award from the Reading League.

Foreword

I am pleased and honored to write the foreword for the third edition of *Speech to Print: Language Essentials for Teachers*. With this next edition, Louisa Moats is continuing her admirable professional commitment to address the critical need for teachers of reading and writing to know the language and orthographic structures of the English writing system.

Following the landmark papers in the 1970s on the role of phonological awareness in reading acquisition, a burgeoning field of research ensued on phonological awareness and additional phoneme-related reading skills (e.g., spelling, decoding real and nonsense words, fluent word recognition) and on underlying phonological processes (e.g., those utilized in verbal working memory, lexical retrieval, phonological quality of lexical items). Students who were struggling to learn the English writing system generally were found to have weaknesses in the underlying processes and had more trouble discovering the individual speech sounds in spoken words and mastering letter–sound skills, as well as more sophisticated features of code patterns. Early phoneme awareness intervention investigations documented noteworthy benefits for students: those in the experimental groups made more progress acquiring phoneme awareness, and their reading development was enhanced. The implication that phonological awareness concepts should be incorporated in the curricula for the early grades and in remedial programs was gaining traction; little thought was given at the time to whether educators had the necessary awareness themselves to provide this instruction (although a small number of researchers had begun to investigate the preparation received by future teachers and expressed concerns about the lack of language content). Similarly, research programs fostering phonics skills were increasing the evidence that this approach benefits reading achievement. Again, whether teachers had the requisite knowledge of the code patterns necessary for teaching students was not questioned during this phase.

For me, the problem regarding teachers' lack of phoneme awareness and their paucity of orthographic knowledge was brought into focus in the early 1990s when browsing through the program for an upcoming conference of the Orton Dyslexia Society (now the International Dyslexia Association [IDA]): a Dr. Louisa Moats was

going to present data collected from two groups of educators before they took one of her courses on language study for teachers of reading. The presentation description summarized that, even for this experienced group of teachers and specialists, the participants had very little knowledge of language structures (e.g., phonemes, morphemes, syntax) or orthographic units (e.g., spelling patterns, syllable types); this content had not been provided during their preparation for teaching, nor had it accrued as a result of teaching. I was struck by the serious implications of these findings for the implementation of research gains in the classroom and noted that the teachers in the Moats study were reported to have felt much more prepared to teach reading after learning about phonemes, graphemes, and other elements of language and literacy.

Galvanized, I reached out to the listed speaker, expressing my strong interest in her results, and asked if we could meet at the conference to discuss the findings and the content of her courses, then at the Greenwood Institute in Vermont. We did, and I quickly recognized that I wanted and needed to increase my knowledge in these applied domains. Dr. Moats generously allowed me to sit in on her next summer course at the Greenwood Institute, and what I learned has informed and contributed to my research, professional development endeavors, and university teaching ever since.

The 1994 article, "The Missing Foundation in Teacher Education: Knowledge of the Structure of Spoken and Written Language," that Dr. Moats wrote about the study of teachers' knowledge noted above spread her noteworthy findings more broadly. Subsequently, publication of the first edition of *Speech to Print* (2000), a unique and much-needed contribution to the field of education, made available the content of her courses to a wide audience.

During and since that time, Louisa Moats has worked in other ways to tenaciously and insightfully address the need to build teacher knowledge. Her article published by the American Federation of Teachers, "Teaching Reading *Is* Rocket Science" (1999), disseminated information about the requirements for effectively teaching reading and has been read by countless teachers, administrators, researchers, policy makers, and politicians. She has shared her expertise nationally and internationally, giving presentations and workshops in which she has explained why language knowledge is crucial for teachers of reading and has taught components of that knowledge. Her training mission evolved, with Dr. Moats serving as the lead author of Language Essentials for Teachers of Reading and Spelling (LETRS), a professional development series of books, workshops, and, more recently, online courses for instruction in reading, spelling, and related language skills. On top of providing professional development for current educators, Dr. Moats targeted the problem that, to stem the flow of inadequately prepared educators, the training of new teachers in colleges and universities must expand to provide thorough, research-based preparation of future teachers at the outset of training. Toward that goal, Louisa Moats was a guiding force in the creation of the Knowledge and Standards for Teachers of Reading established by IDA "to bring greater specificity to how knowledge of the standards could be assessed in the context of coursework and how practice applications of structured literacy could be demonstrated in supervised practicum contexts" (https://dyslexiaida.org/knowledge-and-practices/) (see below for description of structured literacy). The document is being used as part of an IDA program to

grant credentials to higher education departments that meet the standards for preparing teachers of reading.

With the third edition of *Speech to Print*, Dr. Moats augments the valuable contributions of the two earlier editions of this volume. The book achieves a pragmatic and helpful balance among the details needed about language concepts, activities to allow educators to discover and reinforce their mastery of those concepts, and practical applications for the classroom. Dr. Moats provides guidelines on how to use the information to assess student progress and to teach phoneme awareness, early and advanced phonics, word study, syntax, and semantics, all well documented by research to be pertinent for reading success. The final chapter caps the text with a discussion of structured literacy, a term for a type of highly effective teaching methods that requires knowledge of all the components of instruction covered in the prior chapters. Dr. Moats summarizes the meanings of the key features of this approach (i.e., explicit, systematic, multi-modal, diagnostic and responsive, multilinguistic), providing a succinct source for those wanting to critique whether a given program meets the standards for structured literacy or not.

With no exaggeration, the content this book presents is essential for quality instruction by regular teachers of reading and/or writing; by others working with students with reading difficulties, whether reading specialists, special educators, or speech-language pathologists; by teachers of students learning to read for whom English is a second language; and for informed decision making by administrators regarding reading programs, scheduling, supplementary materials, and assessment tools. In short, the information in *Speech to Print, Third Edition* constitutes a critical foundation for all involved in educating children to read and write in the early grades or beyond. I can testify that when teachers master this array of knowledge and skills, it fosters a much greater sense of professional competence and confidence about how to teach reading to all students.

In closing, I add that I deeply admire Louisa Moats for her intellect, vision, compassion for all students and teachers, generosity, and hard work—and I commend her for her truly important contributions to the field of reading.

To my friend and colleague, a heartfelt, "Thank you, Louisa!"

Susan Brady, Ph.D.
Emeritus Professor of Psychology
University of Rhode Island

Introduction: The Missing Foundation in Teacher Education

Linguists, speech-language teachers, actors, singers, and anthropologists are among those professionals who study the forms and functions of language. Curiously, teachers seldom do, even though the listening, speaking, reading, and writing proficiencies touted in our academic standards require language proficiency.

Recent reviews of teacher education programs[1] and surveys of courses and course instructors[2] have found that teacher preparation in reading is often lacking both in information about essential components of reading instruction and in information about language itself. This is the case even though many articles and books have been written about the interdependence of language and literacy.[3] More than ever, it is clear that explicit teaching of oral and written language remains the core aspect of effective instruction for both novice and struggling readers.[4] For those who must be taught how to read and write and who do not learn naturally or easily, good teaching of necessity relies on awareness of language structure and how students acquire literacy.

TEACHING READING IS COMPLEX AND CHALLENGING

The case has often been made that teaching reading and writing requires considerable knowledge and expertise.[5] Nevertheless, many teachers are licensed with only one survey course on reading methods and little background in reading psychology, reading research, language structure, or research-based approaches to instruction, leaving them without the understanding and tools that enable success. Some special education teachers are not required to take any course in reading psychology or reading instruction, even though the large majority of their student caseload will have specific reading disabilities.

Research evidence continues to show, however, that teachers who are most effective with struggling readers have both content knowledge and practical skill and are more inclined to use direct, systematic, explicit, structured language methods for those who do not learn easily.[6] In addition, a documented relationship exists between what teachers know and what they are willing to learn and willing to do. Teachers who know more about the written code of English are more favorably inclined to teach phonics and spelling to students.[7] The students of knowledgeable teachers are more likely to progress than those who score low on a knowledge survey. Teachers who accept and support the necessity for teaching language explicitly are also more receptive to the professional development offered by classroom reading coaches, and more likely to have successful students.[8]

THE IMPORTANCE OF TEACHING STUDENTS, NOT PROGAMS

That said, there is no one curriculum or intervention program that will be uniformly effective with all students who must be taught how to read.[9] Programs invariably have strengths and gaps and must be either supplemented or used judiciously to accomplish learning objectives. Students' profiles of skills and difficulties vary across language and cognitive domains, with some students showing vocabulary and language comprehension weaknesses, many experiencing decoding and word recognition difficulties, and many facing a range of challenges across language learning generally.

Differentiation of instruction is essential, but how? Key factors that interfere with student growth (e.g., phonological awareness, decoding, vocabulary, fluent reading, language comprehension) must be identified and addressed. Knowledge of all aspects of language-based learning will be necessary for teachers to meet the needs of individuals.

What does an effective teacher actually do? Hundreds of small decisions guide the teacher's actions hour to hour. In the course of any day, the teacher must continually pique children's motivation to read and write by showing them that it is possible to progress given instruction that is on target, and engaging them by whatever means necessary. The teacher is also responsible for introducing students to different kinds of texts, including stories, informational pieces, and poetry, within what should be a coherent curriculum. The teacher must also organize the class so that she or he can instruct smaller groups of students in targeted skills. Those on the lower half of the ability curve respond best to direct, systematic, cumulative, and explicit teaching, which is demanding of preparation and energy. To accommodate children's variability, the teacher must assess children and know how they are progressing. He or she must interpret errors, give corrective feedback, select examples for concepts, explain new ideas several ways, and connect many component skills with meaningful reading and writing experiences. Without a doubt, teaching reading and language is a job for a quick-minded, informed, committed, flexible, and knowledgeable professional.

So, teaching students to read, write, listen, and speak is a job for an expert. But consider what teachers are up against if they have little or no administrative or contextual support for learning and applying this disciplinary knowledge base in their work. Textbooks on reading and literacy methods or typical reading instruction courses often exclude the particulars of language structure and how

that information is applied in teaching.[10] In fact, many commonly used textbooks about reading instruction have been found to impart misinformation about speech and print, especially about phonology and the nature of English orthography.[11] And finally, typical courses for reading teachers may cover none or only some of the critical components of effective teaching in sufficient depth to be meaningful.

THE AIM OF THIS BOOK

This book addresses these common gaps in teacher preparation for reading and language instruction. The entire book is motivated by a conviction that language is the critical foundation for reading and literacy education. Its aim is to make language concepts accessible for teachers so that they can use instructional programs with confidence and flexibility. It is detailed enough that teachers can find answers to their questions about children's reading, speaking, and writing behavior, but it avoids overloading the reader with information about other languages or the more technical aspects of linguistics.

The third edition's chapters were rewritten with several aims in mind. One was simply to update the references, improve the clarity of writing, and discuss concepts of reading and language acquisition with reference to current research reviews. Another was to offer a more thorough and theoretically sound discussion of syntax and semantics. A third purpose was to elaborate and clarify how language concepts can be explicitly taught during word recognition, spelling, vocabulary, text comprehension, and writing lessons; and finally, with online supports and a supplementary workbook, to ensure that users of the text have ample practice with the information.

The first edition of this book was written because the author was, once upon a time, that teacher who helplessly floundered with her students who couldn't read and failed to teach them how. Those lost children cannot be found now, but perhaps other children will benefit from teachers empowered with knowledge of language and how to teach it.

A BRIEF INTRODUCTORY SURVEY OF LANGUAGE KNOWLEDGE

1. Can you define these words?
    a. lexicon
    b. digraph
    c. diphthong
    d. phoneme
    e. inflectional suffix
2. How many phonemes are there in each word?
    a. quack
    b. know
    c. fix

d. string

e. thrill

3. Identify the letters and letter groups that correspond to the phonemes in each word.

a. h e i g h t

b. s c r a t c h

c. l a u g h e d

d. m i d d l e

e. g r o o v e

4. Which words are likely from Latin (L)? French (Fr)? Greek (Gr)? Old English (OE)?

a. antique

b. morphology

c. recapitulate

d. featherweight

5. Identify which sentences are simple (S), compound (C), or complex (CX).

a. My ideal place to live would have a swimming pool, although I don't think I'd like to pay what it would cost.

b. All of my cousins and aunts and uncles like to swim off the 25-foot dock at the end of our street.

c. It wasn't a very nice day for swimming, so the family piled into cars and headed out for a long hike.

NOTES

1. National Council on Teacher Quality, 2018
2. Binks-Cantrell, Washburn, Joshi, & Hougen, 2012; Joshi, Binks, Hougen, Dean, Graham, & Smith, 2009; Joshi, Binks, Graham, Ocker-Dean, Smith, & Boulware-Gooden, 2009
3. Moats, 1999; Snow, Griffin, & Burns, 2005; Stone, Silliman, Ehren, & Wallach, 2014
4. Archer & Hughes, 2011; Birsh & Carreker, 2018; Fletcher, Lyon, Fuchs, & Barnes, 2019
5. Moats, 1999, 2014b; McCombes-Tolis & Spear-Swerling, 2011
6. McCombes-Tolis & Spear-Swerling, 2011; Moats, 1999
7. Cunningham, Zibulsky, Stanovich, & Stanovich, 2009
8. Brady et al., 2009
9. Spear-Swerling, 2015
10. Joshi, Binks, Graham et al., 2009
11. Joshi, Binks, Graham et al., 2009

For Charlotte and Nell, my inspirations

1

Why Study Language?

Chapter Goals

- Understand the relationship between language and literacy
- Review the systems that make up language
- Explain why learning to read is difficult for many people
- Identify the extensive research base for understanding how reading skill is acquired
- Describe and recognize the phases of reading development
- Review the essential principles of Structured Language and Literacy instruction

LANGUAGE AND LITERACY

Do you think of reading as a visual skill or competence? Would you send a child with a reading problem to have his or her eyes checked, hoping for a vision treatment that would alleviate the problem? Do you tend to think that poor spellers have a "visual memory" problem that can be solved with rote practice, such as copying each word 10 times?

Contrary to popular beliefs like these, literacy is an achievement that rests primarily on language processing at all levels, from elemental sounds to the most overarching structures of text.[1] Once students learn to read the words, it is verbal abilities (language comprehension) that primarily determine overall reading achievement.[2] On the other hand, visual-spatial reasoning, such as that which is required for scanning pictures, solving puzzles, copying designs, or drawing figures, has very little to do with reading. Therefore, vision therapies that involve colored lenses, directional scanning practice, solving mazes, and so forth are generally ineffective in treating reading problems.[3] Effective instruction emphasizes the forms and uses of language along with the meanings conveyed by words.

One basic model for understanding factors involved in learning to read is called the **Simple View of Reading (SVR).**[4] This well-researched model states that reading comprehension—the desired end result—is the product of word recognition and language comprehension (see Figure 1.1).

Reading ability depends on both the lower level building blocks that drive printed-word recognition, including knowledge of sounds, syllables, letters, and meaningful parts of words, and the higher level aspects of language important for comprehension, including word meanings, phrases, sentences, and discourse.

Both aspects of the SVR equation rely on linguistic abilities, and both are necessary for proficient reading. Word recognition depends on recognition of alphabetic symbols that correspond to speech sounds. Those small segments of speech must be extracted from the unbroken stream of oral language and mapped to letters or letter combinations. Connections between letters and speech segments must be rapid and accurate so that the reader can build a memory store of instantly recognizable written words. Once a word is recognized or named, the reader must determine what that word actually means in a given passage.[5] The apparently "visual" process of word recognition is wired into and deeply dependent on several systems of language processing.

Language comprehension ability, the second major component of the SVR equation, is roughly what readers would understand if a text were read aloud

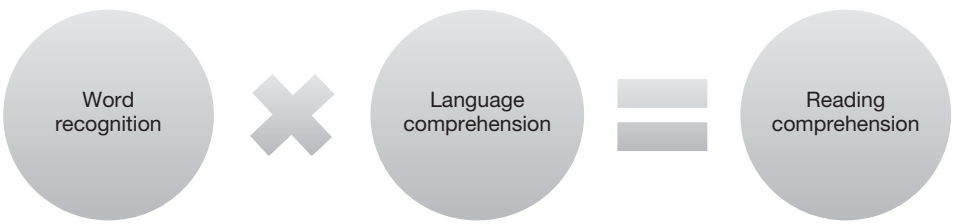

Figure 1.1. The Simple View of Reading. (*Source:* Gough and Tunmer, 1986.)

to them. It involves interpretation of words, phrases, sentences, and connected text. It is also a very active process in which an elaborated idea (mental model) of the information in the text is constructed. In addition, language comprehension requires integrating ideas from one sentence to another and associating the text's information with background knowledge and information from other outside sources.[6]

The language in written text, however, presents unique challenges that are not present in oral or conversational language. The words in written text tend to be more unusual and specialized than words used in speaking, and the sentences of written text tend to be longer, more embedded, more formally constructed, and more challenging to decipher than those of speech.[7] Written text is organized differently—into paragraphs, chapters, and genres or text types. These facts about language imply this: Reading and writing instruction must address a wide range of language forms and uses, along with the facts, themes, and concepts conveyed by text.

Language learning during literacy instruction also requires attention to detail. To distinguish words such as *sacks* and *sax*, or *past* and *passed*, or *their* and *there*, learners must notice subtle differences in sound, form, meaning, and word use. The same can be said for sentences and various kinds of texts. Many struggling students need explicit, systematic instruction before they habitually notice details of both speech and print.

EXERCISE 1.1 Implications of the Simple View of Reading

Note and discuss the implications of the SVR for 1) what should be assessed, 2) how instructional time should be allocated, and 3) what a comprehensive curriculum should address.

WHAT IS THE NATURE OF LANGUAGE?

Five things are important to understand about the nature of human language generally and English in particular:

1. Human language is unique.
2. Language change is constant.
3. English is special because of its wide use across the world.
4. A language is made up of systems.
5. Reading is not natural.

Human Language Is Unique

Generative language is an achievement unique to human beings (see Figure 1.2). Human language is creative because its systems allow us to invent new messages without limit. Unlike the signing systems of some highly evolved animals, such as wolves or whales, human language enables us to produce many messages that have

"Ever since we invented language, the kids aren't breaking and mauling things anymore."

Figure 1.2. The invention of language.

never been spoken before and to speak about abstract ideas that have no concrete or visible referent. Word play, poetry, the invention of new words, and the expression of novel ideas are all possible because of the generative quality of human language. Thus, learning language involves learning both its individual words and its underlying rule systems.[8] We do not learn language merely from imitation or rote memorization of phrases and sentences.

Language Change Is Constant

Languages are constantly changing as the need for new expressions arises and as old expressions become obsolete. Every year the speakers of a language such as English generate several thousand new words and word uses to add to their language systems. The age of technology, for example, has spawned terms such as *blog*, *text* (verb), *webcast*, and *tweet*. Committees that are created by some governments to preserve language purity, prevent change, or establish a standard are bucking a natural human tendency—to generate new language forms and uses within an established system.

English Is Special

No language is superior to any other in terms of the complexity of the rule systems that it embodies. English, however, is special because it is spoken and written as a first or second language throughout the world, and it has become the language of international commerce. In addition, English uses a complex spelling system that renders it more challenging to read and spell than some other alphabetic

languages.[9] Furthermore, American English includes many variants—including some home dialects that are really different language systems—that present a significant challenge for students who must read Standard American English. Teaching the written code of English may take longer and require more knowledge on the part of the instructor than teaching a more transparent code where one symbol exists for each sound.

A Language Is Made Up of Systems

Speakers of a language share an understanding of the rule systems that govern the production of sounds, words, and sentences and when to use them. Speakers of English, for example, know that the sequence *Understanding basic is to language teaching reading* is not an allowable sentence, but *Understanding language is basic to teaching reading* is permitted. Speakers of English know that the names *Nkruma* and *Zhezhnik* are not English because sound sequences in those words do not occur in the English sound system. Those who know the language also know a lot of specific word meanings. As Steven Pinker noted, language, in essence, is made of words and rules.[10]

The systems that make up language, depicted in Figure 1.3 and explained further in Table 1.1, are all part of a language's grammar.

Between 4,000 and 6,000 spoken languages are estimated to exist on the earth today,[11] but many are spoken by only a limited number of people and are disappearing quickly as Western civilization encroaches on developing societies. All of these human languages share properties known as **universals.** From a finite set of speech sounds (**phonemes**), speakers of an oral language say and understand thousands of words. Words, in turn, are composed of meaningful units (**morphemes**) that often can be recombined to make new words. Words themselves have meaning, and combinations of words (as in phrases and sentences) also have meaning. The study of word, phrase, and sentence meanings is called **semantics.** Words

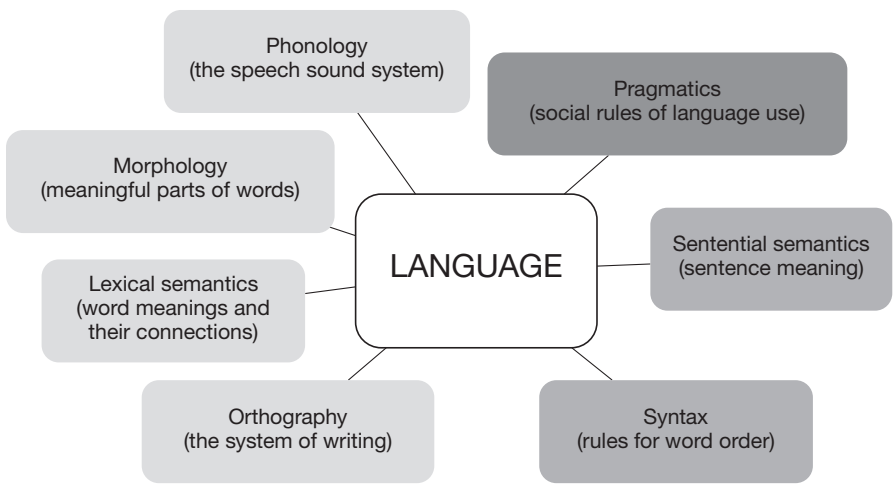

Figure 1.3. The systems of language, with those on the left primarily supporting word knowledge, and those on the right underlying sentence and text comprehension.

Table 1.1. Language systems and their relevance to literacy

Language system	Relevance to reading and writing
Orthography: the written system of spelling patterns and correspondences between speech and print	The spelling system represents phoneme–grapheme correspondences, syllable patterns, and meaningful parts of words (morphemes); it must be decoded for reading and encoded for writing.
Phonetics: the articulation and perception of speech sounds	Descriptions of and comparisons of speech sounds enable the teaching of phoneme awareness and word pronunciation. These in turn enable printed word recognition and spelling.
Phonology: the system of rules governing the sequencing and distribution of speech sounds in words	Sounds are combined according to rules and patterns; knowledge of these patterns facilitates word recognition, spelling, and vocabulary.
Morphology: the smallest meaningful parts from which words are created	Compounds, prefixes, suffixes, roots, and combining forms are examples of morphemes important for vocabulary, word recognition, and spelling.
Syntax: the rule system that governs how words are combined into phrases, clauses, and sentences	Interpreting syntax is essential for reading comprehension; producing grammatical syntax is essential for written expression. Punctuation marks syntactic structures.
Semantics: the aspect of language that concerns the meanings of words, phrases, and sentences and the relationships among word meanings	Semantic processing is recognizing, constructing, storing, and retrieving meaning represented by language.
Discourse: the organizational conventions of connected text	Paragraph structure, dialogue, narrative form, expository forms, and other text organizations enable reading comprehension and written expression.
Pragmatics: how language is used in social contexts; rules of social discourse	Audience awareness in writing and author awareness in reading are pragmatic skills.

belong to grammatical categories and are spoken in an order determined by underlying rules of **syntax** or sentence structure. Every speaker of a human language shares with every other speaker of that language the capacity to produce and comprehend an infinite number of sentences whose structures share basic properties. **Pragmatics** is the rule system that tells speakers how to use language for social communication. Most human societies have either devised systems of written symbols (**orthographies**) to represent the sounds, syllables, and morphemes of spoken language, or borrowed the symbol systems of others.

Reading Is Not Natural

The invention of tools for reading and writing is unique to humans. In evolutionary terms, however, reading and writing are very recent accomplishments. Human speech may have developed as early as 100,000 years ago, but humans did not invent writing until Chinese and Mediterranean tribes used meaningful written signs for concepts and words between 5,000 and 10,000 years ago. Alphabets, systems that use symbols for individual speech sounds, were invented little more than 5,000 years ago and were never in widespread use until about five centuries ago. It is understandable, then, that learning to read is not as natural or biologically

"wired in" as are speaking and listening,[12] and reading must be taught directly to most children over several years through formal education. Our brains are not as fully evolved for processing written language as they are for processing spoken language, and, therefore, learning to read and write is more challenging than learning to speak.

READING IS DIFFICULT FOR MANY PEOPLE

Few would deny that teaching children to read, write, spell, listen, and speak is among the foremost responsibilities of educators. Without well-developed reading skills, children cannot participate fully in classroom learning. They are at much greater risk for school failure and lifelong problems with employment, social adjustment, and personal autonomy. Literate cultures expect literacy of everyone, even so-called low-skilled workers who must read labels, directions, lists, forms, and records. Although a fairly large number of individuals in our society have always had difficulty learning to read, it is no longer acceptable to ignore them, give them failing grades, or banish them to the ranks of lower-status jobs. The cost to society is too great. In addition, there are many children who would learn to read and write much better if they were taught to understand the systems of their own language (sounds, spellings, meaningful networks, sentences, text organization) in addition to reading textbooks and literature.

When children are taught well and, consequently, begin to read in kindergarten or first grade, they are likely to reap benefits throughout their schooling.[13] Those who read successfully from the start are more likely to enjoy reading, develop their knowledge of words and language patterns, and attain knowledge of the world by reading. Failure to read well, in contrast, undermines vocabulary growth, knowledge acquisition, verbal facility, and writing skill. As early as kindergarten, how well students acquire foundational reading skills predicts their reading comprehension ability into high school.[14] Once behind in reading, few children catch up to grade level unless they receive intensive, individualized, costly, and expert instruction. Teaching everyone to read well, however, is a goal that has eluded us in the past.

Screening tests that predict who, in the early grades, will have a reading problem generally classify those who are below the 40th percentile as being "at some risk" for failing to meet grade-level expectations.[15] Below the 20th percentile is considered to be the threshold for a significant reading problem that will interfere with all academic functioning. The National Assessment of Educational Progress (NAEP) consistently finds that about 34% of all fourth-grade students in the United States are "below basic" in their reading skills.[16] According to a 2003 National Adult Literacy Survey, 14% of American adults are unable to perform functional reading tasks such as reading medicine labels or train schedules. Another 29% are at "basic" levels, below "intermediate," and do not read and write well enough to perform the literacy requirements of a typical job. Individuals who are poor readers are much more likely than literate people to drop out of school, end up in jail, or struggle to find and keep meaningful, satisfying work.[17]

For children who live in poverty or are from ethnic minorities and attend low-performing urban schools, the incidence of reading failure is much higher than in more privileged communities. African American students, Hispanic students, students whose native language is not English, and those from impoverished homes

fall behind and stay behind in far greater proportion than their Caucasian, middle-class counterparts. The rate of reading failure in these groups can be 60%–70%. This figure alone explains much about the poor academic achievement of some minority students and why they are underrepresented in professions that depend on higher education.

One's family background and cultural context, however, do not guarantee literacy. Students of all backgrounds and intellectual talents may experience difficulty with language and reading that erodes their overall academic achievement. In 1996, California initiated a series of laws to reform reading education after 49% of children of college-educated parents in that state scored below proficient levels on the NAEP. One third of fourth-grade students who are poor readers nationwide are from college-educated families who presumably encourage literacy in the home.

These statistics show that exposure to books and motivation to read, although vital to becoming a good reader, are not enough for many students to learn to read. Biological factors interact with environmental conditions to determine how easily students will learn. Even if their parents read to them at home or they are surrounded with good literature, a sizable proportion of our students need to be taught how to read. Many students must be taught how spoken and written language work so that they have the tools to decipher and generate the written word. The good news is that most students can learn to read at acceptable levels when teaching is skillful, explicit, and informed and intervention begins early.

EXERCISE 1.2 Why Learning to Read Is Difficult

What evidence indicates that learning to read is much more difficult than learning to talk? What are the special linguistic demands of reading? Why don't kids learn to read just from being surrounded by books or having access to books?

A RESEARCH CONSENSUS ABOUT LANGUAGE AND READING

The findings of scientific research in the field of reading have had a major impact on federal, state, and local policies pertaining to teacher preparation and reading instruction. There have been many such reports since the 1960s, as shown in the sampling below. These include reviews by panels of top researchers, meta-analyses of hundreds of scientific studies, and consensus statements by professional organizations.

Teacher preparation and teaching itself continues to be driven more by fads and philosophies than by facts, even with the publication of numerous scientific reviews. One reason for the lag between research and practice is that the methods of psychological experimentation necessary to unravel the mystery of reading were not developed until the mid-1970s, and there is always a long delay between developments in academic research disciplines and their incorporation into teaching practice. As with other fields of scientific investigation, many studies in related disciplines were needed before consensus findings could be accepted and disseminated. Research-based insights into the brain's reading processes, the nature of language learning, and the impacts of instruction have only recently driven changes

A Sampling of Important Reviews and Consensus Papers About Reading

Adams, M. J. (1990). *Beginning to read: Thinking and learning about print.* Cambridge, MA: The MIT Press.

Anderson, R. C., Heibert, E. H., Scott, J. A., & Wilkinson, I. A. G. (1985). *Becoming a nation of readers: The report of the Commission on Reading.* Washington, DC: National Academy of Education.

Armbruster, B., Osborn, J., & Lehr, F. (2001). *Put reading first.* Washington, DC: National Institute for Literacy.

Bond, G. L., & Dykstra, R. (1967). The cooperative research program in first-grade reading instruction. *Reading Research Quarterly, 2(*4), 5–142.

Castles, A., Rastle, K., & Nation, K. (2018). Ending the reading wars: Reading acquisition from novice to expert. *Psychological Science in the Public Interest, 19*(1), 5–51.

Foorman, B., Beyler, N., Borradaile, K., Coyne, M., Denton, C. A., Dimino, J., et al. (2016). *Foundational skills to support reading for understanding in kindergarten through 3rd grade* (NCEE 2016-4008). U.S. Department of Education. Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance. Washington, DC: Government Printing Office.

McCardle, P., & Chhabra, V. (Eds.). (2004). *The voice of evidence in reading research.* Baltimore, MD: Paul H. Brookes Publishing Co.

National Early Literacy Panel (NELP). (2008). *Developing early literacy: Report of the National Early Literacy Panel.* Washington, DC: National Institute for Literacy.

National Institute of Child Health and Human Development (NICHD). (2000). *Report of the national reading panel: Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction.* Washington, DC: U.S. Government Printing Office.

Rayner, K., Foorman, B. R., Perfetti, C. A., Pesetsky, D., & Seidenberg, M. S. (2001). How psychological science informs the teaching of reading. *Psychological Science in the Public Interest, 2*(2).

Resnick, L. B., & Weaver, P. A. (Eds.). (1979). *Theory and practice of early reading* (Vol. 3). New York, NY: Routledge.

Snow, C. E., Burns, M. S., & Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children.* Washington, DC: National Academy Press, National Research Council.

in funding mechanisms and policies affecting teacher preparation and professional development. Several other realities explain why we have been slow to understand how reading is accomplished and how best to teach it:

1. Language processing, including reading, is largely unconscious.
2. Language structure is not self-evident.
3. Good readers can intuit language structure; poor readers cannot.
4. Students may be good or poor at either word recognition or language comprehension, or both—that is, the major components of reading.

Each of these is discussed in depth in the sections that follow.

Language Processing, Including Reading, Is Largely Unconscious

Processing language, especially at the level of sounds, syllables, and words, is automatic—that is, fast and unconscious. If we are good readers, then processing print has also become automatic. We are not aware of how we are actually reading as we are doing it, and we are not aware of the mental events that allow reading to happen. **Automaticity** is the word for the ability to execute tasks without conscious attention. It is a characteristic of skilled performance of any kind, such as playing an instrument, playing an athletic game, or operating a machine. The mental processes of good and poor readers are neither self-evident nor easy to grasp because they occur below the level of consciousness by design. Introspection—that is, viewing one's own mental activity—is misleading for understanding the mind of the skilled reader because the print–speech associations that occur during reading are too rapid and automatic to be perceived.

For example, do you think that you skip over words when you read and somehow extract the meaning of the print without seeing what is really there? That idea was prevalent in the early 1970s, when instructional methods that promote guessing at words on the basis of context were popular. In fact, laboratory experiments that track eye movements during reading, using different stimuli and many kinds of subjects, have shown that skilled reading is print driven.[18] That is, we process almost every letter of every word when we scan print, even though we fixate or focus our eyes primarily on the content (meaning-bearing) words as we scan a line. Those who read well process the details in the printed words accurately; those who read poorly do not process the details of the print and tend to skip over words they are unsure of because they cannot decode them. As many studies using eye movement technology have shown, that tendency to skip over words is not a result of any vision problem in most cases but a result of a problem matching the print to sound completely, accurately, and efficiently.[19] Those who accomplish letter-wise text scanning with relative ease and fluency have a better chance of comprehending well. Those who comprehend poorly often lose meaning because they cannot read the words accurately or efficiently.

Primary processes that drive printed-word reading include our ability to associate print units (letters, letter combinations, letter sequences, words, and punctuation marks) with linguistic units (phonemes, onsets, rimes, syllables, morphemes, words, and phrases). A simplified model of the language systems that must be linked to support word reading is depicted in Figure 1.4.

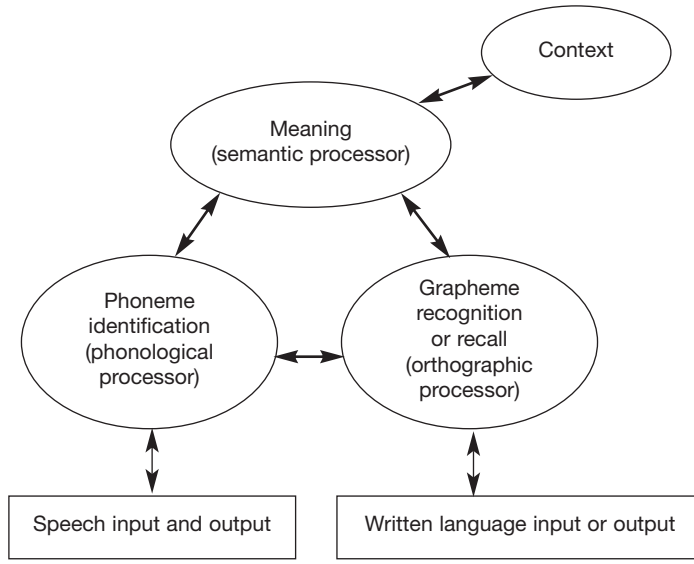

Figure 1.4. The four-part processing system model for word recognition. (*Source:* Rayner et al., 2001.)

Linguistic units, including speech sounds, are neither auditory nor visual; they are abstract, mental phenomena and can be understood even by people who are hard of hearing. Because our attention is on meaning, we are not aware of the code translation process by which meaning is accessed. Nor should we be—unless we must teach someone to learn this process deliberately, step by step. Until we are faced with a class of children who are striving to read symbols for speech sounds and word parts, we may never have analyzed language at the level required for explaining and teaching it. Similarly, we may not know how a paragraph is organized or how a story is put together until we teach writing to students who do not know how to organize their thoughts. Thus, to understand printed language well enough to teach it explicitly requires conscious study of its systems and forms, both spoken and written.

Language Structure Is Not Self-Evident

Even well-educated adults often do not know exactly what goes into speaking, understanding words, using phonics, spelling, interpreting sentences, or organizing a composition, even though they use these language structures every day. On direct measures of language knowledge at the "lower" levels (sounds, word parts, spelling), most adults show cursory or incomplete mastery at best.[20] For example, even experienced teachers may not clearly understand the concept that a letter combination (*ch*, *wh*, *sh*, *th*, *ng*) can represent one unique speech sound. Many identify these units by rote but are unable to differentiate conceptually between these spelling units (**digraphs**) and two letters that stand for two distinct sounds (consonant blends such as *cl*, *st*, *pr*) or silent letter spellings that retain the sound of one spelled consonant (*kn-*, *wr-*, *-mb*). Very few adults, unless they are studying and teaching the material, can explain why we double the consonant letters in

words such as *misspell*, *dinner*, and *accommodate* or why there is a "silent *e*" on the end of the word *love.* A deeper, explicit level of knowledge may not be necessary for teachers to read the words, but it will be necessary to explain pronunciation and spelling, where the words came from, and how spelling is related to meaning.

In addition, the relationships among the basic skills of reading and reading comprehension are not obvious or self-evident. When children read poorly in the middle and upper grades, we may assume that the problem is one of comprehension. We may not realize that difficulties with word recognition accuracy and speed, diminished reading fluency, and language comprehension problems all contribute to poor reading in older students and that all components must be explicitly addressed in instruction. Students who cannot read words well usually or typically demonstrate weaknesses in **phoneme awareness**—the ability to identify, manipulate, produce, and remember speech sounds—but one might not perceive this weakness without the special training that begins with language study.

Good Readers Can Intuit Language Structure; Poor Readers Cannot

Some children learn language concepts and their application easily, in spite of incidental teaching, and with few examples. Just as some children seem to be born with insight into how the number system works, others just figure out how the system of print represents speech. They are lucky enough to be "wired" for print processing. Figure 1.5 shows the writing of Hannah on her fourth birthday; she had already intuited a great deal about how letter symbols are used to spell sounds.

Figure 1.5. Hannah's birthday note.

Hannah's understanding of the correspondence system was precocious; for example, she knew that letter combinations *th* and *ng* were used to represent sounds. She represented almost all of the speech sounds in the words. A more typical preschooler would have written a few letters or marks that looked like writing but that bore no relationship to the sounds in speech. Children who learn to read easily, like Hannah, are generally very good at perceiving linguistic structure at all levels in both spoken and written language. They recognize repetitious patterns in print and connect letter patterns with sounds, syllables, and meaningful word parts quickly, accurately, and unconsciously. Poor readers often lack these aptitudes but most will respond to explicit teaching.

Poor Reader Subtypes: Word Recognition, Language Comprehension, or a Mix?

The SVR suggests that students may be good or poor at either or both of the major components of reading (see Figure 1.6).[21] The language skills that most reliably distinguish groups of good and poor readers, especially in preschool and primary grades, are specific to the word recognition component of the SVR. These include awareness of the elemental linguistic building blocks of words (consonants, vowels, onsets, rimes, syllables, grammatical endings, meaningful parts) and proficiency in recognition and recall of the spelling patterns that represent them. Problems with these underlying linguistic abilities may be hidden from view unless the educator knows how to look for them. Students may present themselves as slow, avoidant, or unable to understand, when the real obstacle lies within foundational language processing networks.

Good comprehension is predicted by good word recognition *and* by good language comprehension. Those who do well on passage reading comprehension are likely to be good at reading words taken out of context, sounding out nonsense words, and spelling nonsense words. The opposite is true for students who do not read with fluency and comprehension. They typically overrely on contextual guessing strategies when they do not know a word.[22]

A specific problem with word recognition and spelling in the presence of normal to good oral language comprehension is typically referred to as **dyslexia.**

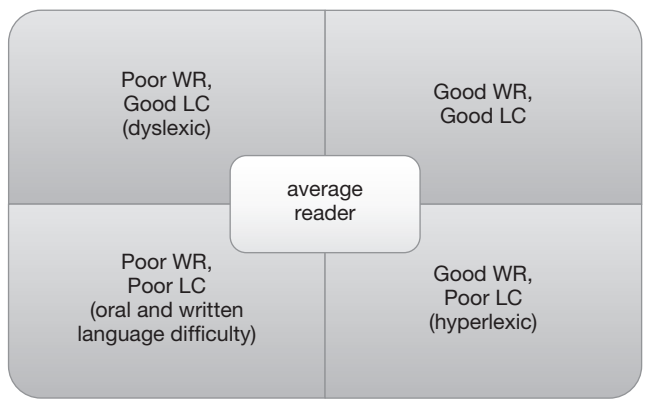

Figure 1.6. Reader subtypes based on components of the Simple View of Reading, Word Recognition (WR), and Language Comprehension (LC).

In contrast, when oral language comprehension problems occur in children whose word recognition is relatively strong, the condition may be described as **hyperlexia.** That profile—of specific comprehension weaknesses—is relatively less common than either dyslexia or mixed oral and written language learning disabilities and comprises perhaps 10%–15% of all those who score poorly on reading tests.[23]

What about IQ and its relationship with reading? The correlations and causal effects of verbal intelligence on reading achievement change as reading develops.[24] IQ scores and verbal reasoning ability do not predict reading success in the beginning stages as well as phonological and decoding skills do. One major study found that 80% of the variance in reading comprehension at the first-grade level is accounted for by how well students sound out words and recognize words out of context.[25] After students have learned to read with accuracy and fluency, beginning at about the fourth-grade level, language comprehension accounts for much more of reading comprehension than it does in the early stages of learning to read. Nevertheless, vocabulary and language comprehension must be nurtured from the outset of schooling so that students are armed with a vocabulary, topic knowledge, and familiarity with academic language when text demands increase and they have to read independently.

EXERCISE 1.3 Research on Good and Poor Readers

1. Are you familiar with any of the research publications cited in "A Sampling of Important Reviews and Consensus Papers About Reading"? Do you have access to any of these documents? Have you read them yourself or relied on the comments of other people to shape your opinions?
2. Do the data about good and poor readers surprise you? If so, in what way?
3. Why might potential reading failure or reading disability go unnoticed or undetected?

HOW READING AND SPELLING DEVELOP

Learning to read is a protracted process for many. Proficiency is gained steadily and continuously over the elementary years. One of the most useful depictions of the course of reading development is Scarborough's rope model (see Figure 1.7).

The model shows that proficient reading is the consequence of identifiable strands or variables that each contribute something unique to the outcome. The strands are grouped within the two overarching components of the SVR—word recognition and language comprehension. Notice that even within proficient reading, which is executed fluently and automatically, the strands of the rope retain their integrity. That is, we can measure the relative contribution of each strand to overall reading competence even in a mature reader.

Early word reading follows a predictable course regardless of the reader's speed of reading acquisition. Three distinct subskills are involved, as the rope model suggests: phoneme awareness, phonic decoding, and storage of "sight" words in memory. The term "sight words" is unfortunate, because word images

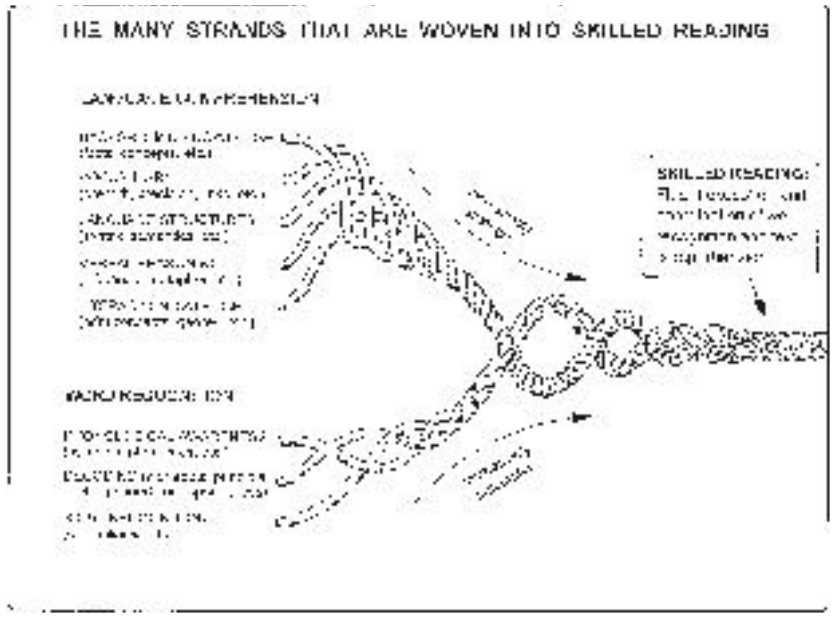

Figure 1.7. Reading Rope. (From Scarborough, 2001. Reprinted by permission.)

are stored not by their global, visual characteristics, but by the mapped correspondences between phonemes, morphemes, and print patterns.

The learner progresses in several respects as they become proficient:

- From global to analytic processing
- From approximate to specific linking of sound with symbols
- From context-driven to print-driven reading
- From effortful to effortless text processing

Automatic word reading, necessary to support fluent passage reading for comprehension, occurs because the learner has stored in memory a large bank of words that can be instantly recognized. You, the reader, probably can recognize between 30,000 and 80,000 words in this highly proficient and unconscious manner. Figure 1.8 illustrates how these early processes of word reading and spelling unfold, using terms preferred by Linnea Ehri.[26] Ehri and others use the idea of "phases" to describe qualitatively different behaviors at points on a continuum of learning. These blend into one another as growth occurs. Skills and conceptual understandings associated with each phase are described in the sections that follow.

Prealphabetic Phase

In the **logographic, prereading,** or **prealphabetic** phase, children have not acquired the **alphabetic principle**—the insight that letters represent the sounds in words. They do know that print represents spoken messages and do know

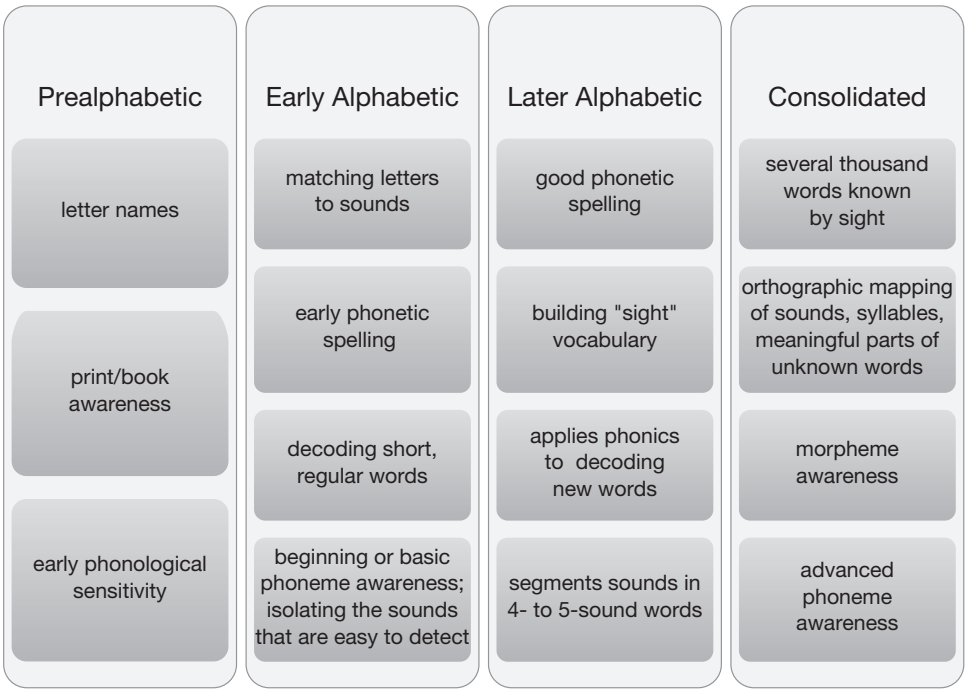

Figure 1.8. Phases of word reading and spelling development. (*Source:* Ehri, 2014.)

something about the way print looks. They may know letter names without knowing what the letters are for. Up through age 4 or so, children may remember a few words, such as family names and signs, by configuration or general visual appearance and may be highly reliant on the context in which words occur to recognize them. They have no strategy for reading other than rote memory of visual patterns or recognizing a word in its physical or meaning context. Their spelling of words is often a string of familiar letters in random order, perhaps with a few idiosyncratic symbols or numerals thrown in the mix. An example of prealphabetic writing appears in Figure 1.9.

Early Alphabetic Phase

When children discover a critical fact, that letters correspond to the sounds that make up spoken words, their approach to both reading and spelling shifts. From their growing awareness of speech sounds and knowledge of letter names and forms, children begin to spell and read by sounding out parts of words, often a few consonants that are salient in speech (as in KR for *car* and HP for *happy*). At this point, they may attempt to "read" words by guessing from the initial consonant and the context, and they may spell by writing a few consonants but leaving out the vowel or the internal, less distinct speech sounds. They are beginning to demonstrate awareness of phonemes and the use of the alphabet to represent them. This shift of awareness occurs typically at kindergarten age or about age 5–5½. Figure 1.10 shows one child's early alphabetic writing.

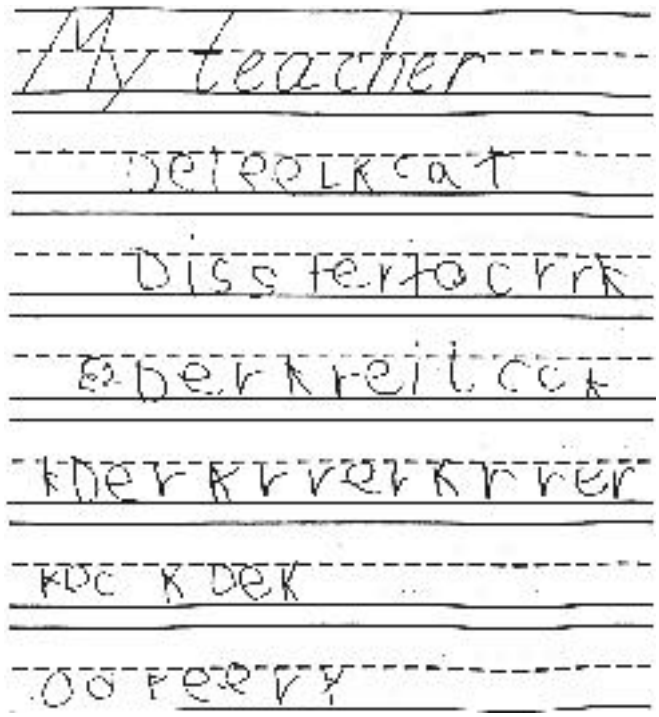

Figure 1.9. Example of prealphabetic writing.

Later Alphabetic Phase

Skill at sounding out words and spelling them phonetically unfolds gradually as children learn to identify all of the speech sounds in a word to which letters must be matched. Simultaneously, with the ability to segment the phonemes in words and map letters to those sounds, children may learn quickly how print patterns represent speech. At this stage, children render detailed phonetic spellings of unknown words and try to sound out words if the strategy is encouraged. They are usually rather slow and dysfluent as they start to sound out words because so much conscious attention is needed to match symbols to sounds in sequence.

As they learn phoneme–**grapheme** mapping, students build a storehouse of known words in memory. These are words that have been accurately decoded and encountered often enough that they are recognized instantly, within a quarter of a second, with no conscious effort. One of the important findings of research is that automatic recognition of whole words occurs because the learner can use phoneme–grapheme relationships (phonics) to map speech to print and print to speech. Young readers are most likely to form memories of words that they have examined in sufficient detail to allow proficient matching to occur.

Exposure to text and reading practice are critical in moving spelling development along. Children in the later alphabetic phase, asked to identify nonsense words that look the most like real words, often show surprising awareness of the letter sequences and orthographic patterns that characterize English spelling,

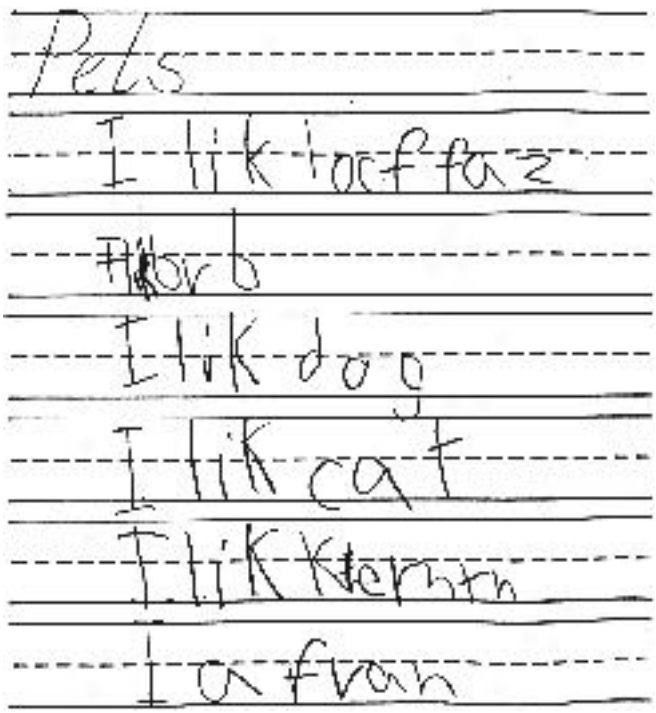

Figure 1.10. Example of early alphabetic writing. Translation: "I like elephants; I like bird(s); I like dog(s); I like kitten(s); I [have] a friend."

even though they may not have complete mastery of the system. For example, they may know that *-ck* is used at the ends of words but not at the beginnings, that letters can be doubled at the ends of words or within words but not at the beginnings, that only certain letters are doubled, and that syllables typically contain a vowel letter.[27] **Orthographic knowledge,** which is knowledge of specific spellings and patterns in the spelling system, develops as the student internalizes awareness of the sounds, morphemes, and syntactic roles that written symbols represent and can use that knowledge efficiently. A sample of later alphabetic writing appears in Figure 1.11.

The Full Orthographic Mapping or Consolidated Phase

The consolidated phase is characterized by rapid recognition of a substantial "sight" vocabulary and the ability to learn new words with one or very few exposures. **Orthographic mapping** is the process underlying this remarkable achievement.

As Kilpatrick and others describe the process, orthographic mapping occurs as a result of rapid, bidirectional exchanges between the phonological processing system, the orthographic processing system, and knowledge of word meaning. To enable this exchange between speech and print, our phoneme analysis and synthesis skills must be very proficient. If they are, we can effortlessly and instantly compare words that differ in one sound, for example *assessable* and *accessible; tenet* and *tenant; scarred* and *scared.* We can quickly reverse, exchange, delete,

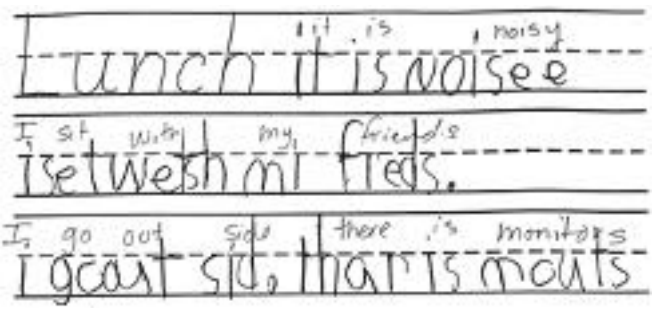

Figure 1.11. Example of later alphabetic writing with teacher's notes from student's rereading.

and recombine sounds in words and apply those skills to analyzing new printed words and filing them into the brain's word recognition dictionary, as illustrated in Figure 1.12.

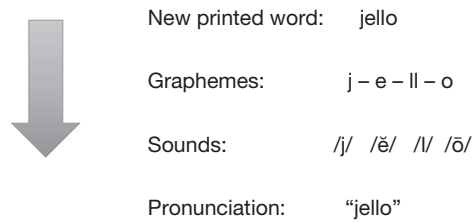

Figure 1.12. Stored word image in memory for spelling or future recognition.

At this phase of mastery, our knowledge of the print system, including how it represents sounds, syllables, and meaningful parts of words, is accessed when we look at a new word and analyze it. In the example of *Jell-O*, if we know words like *well*, *fell*, and *tell*, we mentally compare or analogize from the new to the known. If a word has prefixes, roots, or suffixes, we may recognize those parts as chunks. For example, we might see the word *reparation* and instantly infer, because we know other words with these parts, that *re* is a prefix, *ation* is a suffix, and *par* might be related to the *pair* in *repair*.

Effective teaching, then, will be responsive to students' levels of reading development—a topic we will refer to in the last chapter of this book. An expert teacher will relate spoken to written language and explicitly teach how language works, layer by layer. The content of any lesson will depend on what students already know and move them along step by step. Finally, instruction time will be apportioned across word recognition and language comprehension, strand by strand, depending on students' reading profiles.[28]

PREVENTION CAN MAKE A BIG DIFFERENCE

Most reading problems can be either prevented or greatly ameliorated through appropriate instruction. According to the convergent findings of numerous studies,

classroom instruction that builds phoneme awareness, phonic decoding skills, text reading fluency, vocabulary, and various aspects of comprehension is the best antidote for reading difficulty. Although parents, communities, and volunteer tutorial programs do influence how well and how soon students read, informed classroom instruction that begins to teach critical language and reading skills in kindergarten and that is sustained throughout schooling ensures success for all but a few students with moderate or severe learning disabilities.

Intervention studies have shown that 95% of first-grade students can be taught to read at a level constrained only by their reasoning and listening comprehension abilities.[29] It is clear as well that students in high-risk populations need not fail at the rate they do. Students who live in poverty can be as successful as their more advantaged peers when placed in schools with strong leaders, valid programs, and well-prepared and well-supported teachers. Teachers who incorporate critical language skills into direct, systematic, sequenced lessons can reach most children. Reading programs that are well designed and implemented by informed teachers are the best guard against reading failure.

PRINCIPLES OF EFFECTIVE TEACHING OF READING, SPELLING, AND WRITING

Recently, the International Dyslexia Association (IDA) adopted the term *Structured Literacy* to refer to the content and principles of explicit teaching that works best with students who must be taught how to read.[30] A more elaborated term would be Structured Language and Literacy (SLL). Structured Language and Literacy teaching encompasses all major components of reading instruction and all layers of language. It develops students' ability to interpret and generate sound-spellings, syllables, morphemes, phrases, sentences, paragraphs, and various genres of text. Ideally, a comprehensive program balances skill development with daily writing and reading that is purposeful and engaging. Reading and language instruction should occur within a rich, substantive, knowledge-building curriculum. Specific recommendations, grounded in a substantial body of research, are provided below.

Seven Recommended Principles and Practices of Instruction

The consensus documents cited previously have consistently found and recommended the following seven principles and practices of instruction:

1. Explicit teaching of phonological skills, sound–symbol correspondence (phonics), fluent word recognition and text reading, vocabulary, text comprehension, and literature appreciation is necessary from when children begin school until they become proficient readers and writers.
2. Phoneme awareness instruction, when linked to systematic decoding and spelling instruction, is a key to preventing reading failure in children who come to school without these prerequisite skills.

3. It is better to teach the code of written English systematically and explicitly than it is to teach it randomly, indirectly, or incidentally. The units for instruction (sound, syllable, morpheme, word) should vary according to students' reading and spelling skill.
4. The most effective programs include daily exposure to a variety of texts and incentives for children to read independently and with others. Short exercises that build reading fluency may include speed drills on component skills, repeated readings of text, alternate reading with a partner, simultaneous oral reading of easy material, and daily independent reading.
5. Vocabulary is best taught with a variety of complementary methods designed to explore the relationships among words and the relationships among word structure, origin, and meaning. Close reading of text for topic-specific content is the most important activity for building comprehension.
6. Valuable comprehension strategies include summarizing, clarifying, questioning, using graphic organizers, and visualizing. Strategy instruction should be embedded in reading lessons focused on learning curricular content. Strategies such as formulating questions before, during, and after reading can be modeled explicitly by the teacher and practiced overtly during the purposeful reading of worthwhile literature.
7. Effective teachers encourage frequent prose writing to enable deeper understanding of what is read.

To master all of these teaching principles and apply them well takes most of us a long time. At least we can proceed with the confidence that there is a solid body of evidence about what works, for whom, and why. We know that it is beneficial to teach children about language and that such learning can be engaging, active, enjoyable—and even thrilling.

The major systems of language, with the exception of pragmatics and discourse, are treated in this book. Within-chapter exercises are included in this book and in an accompanying workbook. Among the appendixes are more resources and a glossary of terms highlighted in the text. Deeper discussion of pragmatics, discourse structure, social uses of language, and language acquisition is left for other writers to tackle.

NOTES

1. Castles, Rastle, & Nation, 2018; Seidenberg, 2017
2. Shatschneider, Fletcher, Francis, Carlson, & Foorman 2004; Vellutino, Tunmer, Jaccard, & Chen, 2007
3. American Academy of Ophthalmology, 2014
4. Gough & Tunmer, 1986
5. Ashby, Sanders, & Kingston, 2009

6. Oakhill, Cain, & Elbro, 2015
7. Cunningham & Stanovich, 1998
8. Pinker, 1999
9. Pugh & Verhoeven, 2018
10. Pinker, 1999
11. Anderson, 2019
12. Dehaene, 2009; Wolf, 2007
13. Cunningham & Stanovich, 1998; National Early Literacy Panel, 2008
14. Kjeldsen, Karna, Niemi, Olofsson, & Witting, 2014; Stanley, Petscher, & Catts, 2018
15. Good, Simmons, & Kame'enui, 2001
16. U.S. Department of Education, National Center for Education Statistics, 2018
17. Sweet, 2004
18. Rayner, 1998; Seidenberg, 2017
19. Kilpatrick, 2015
20. Moats, 2017; Spear-Swerling & Brucker, 2006
21. Spear-Swerling, 2015
22. Adams, 1990; Seidenberg, 2017
23. Fletcher, Lyon, Fuchs, & Barnes, 2019
24. Schatschneider et al., 2004; Vellutino et al., 2007
25. Rayner, Foorman, Perfetti, Pesetsky, & Seidenberg, 2001
26. Ehri, 2014; Kilpatrick, 2015; Share, 2011
27. Treiman, 2017
28. Spear-Swerling, 2015
29. Foorman et al., 2016; Mathes et al., 2005; National Reading Panel, 2000
30. Moats, 2019; Spear-Swerling, 2019

Chapter 1 Exercises

EXERCISE 1.1. Implications of the Simple View of Reading

Note and discuss the implications of the SVR for 1) what should be assessed, 2) how instructional time should be allocated, and 3) what a comprehensive curriculum should address. (Responses will vary.)

EXERCISE 1.2. Why Learning to Read Is Difficult

What evidence indicates that learning to read is much more difficult than learning to talk? What are the special linguistic demands of reading? Why don't kids learn to read just from being surrounded by books or having access to books? (Responses will vary.)

EXERCISE 1.3. Research on Good and Poor Readers

1. Are you familiar with any of the research publications cited in "A Sampling of Important Reviews and Consensus Papers About Reading"? Do you have access to any of these documents? Have you read them yourself or relied on the comments of other people to shape your opinions? (Responses will vary.)
2. Do the data about good and poor readers surprise you? If so, in what way? (Responses will vary.)
3. Why might potential reading failure or reading disability go unnoticed or undetected? (Responses will vary.)