FIGURE 2–7

Phonics instruction involves associating sounds with letters or letter groups

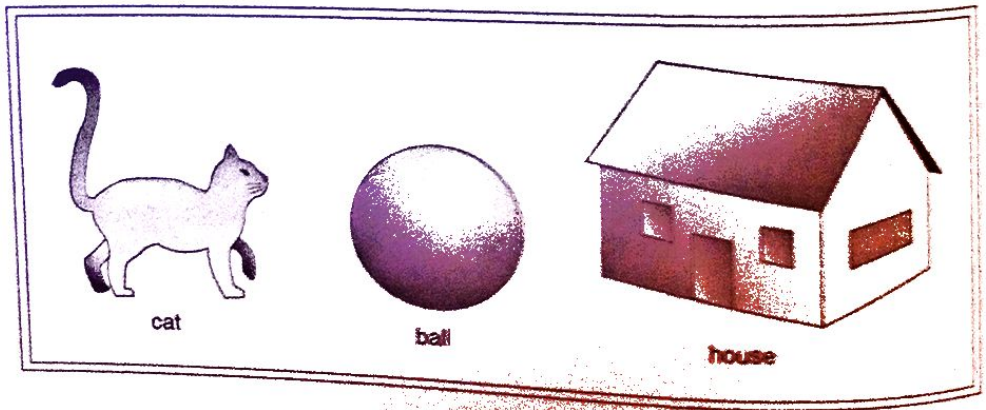
Adapted from Open Court Phonics Kit (2002).

between letters or groups of letters and their pronunciations" (p. 50). For example, Table 2–1 lists 42 basic sounds in spoken English and gives examples of letters that correspond to the sounds. Readers must learn to associate the appropriate sound with the appropriate letter(s). Figure 2–7 shows a picture of a flat tire (making the "sssss" sound) along with letters that can correspond to this sound.

In contrast, the whole-word method involves teaching children to "sight read" words, that is, to be able to pronounce a whole word as a single unit. For example, an early reading program may concentrate on introducing a few hundred words. Figure 2–8 shows some typical first words to be learned by beginning readers. Over time, new words are systematically added to the reader's repertoire. The whole-word approach is generally part of a *meaning-emphasis method*, in which determining the meaning of each word is a major goal. A somewhat related alternative to the phonics approach is the whole-language

FIGURE 2–8

Whole-word instruction involves associating word names with printed words



approach, which emphasizes the development of the child's overall language ability by integrating reading, speaking, listening, and writing, and by using authentic literature rather than drill on phonics subskills (Chall, 2000).

The history of reading research in the United States documents several swings between the phonics and whole-word approach (Adams, 1990; Chall, 2000). In the beginning, during the 1700s, the phonics method was emphasized. The standard textbook was *The New England Primer*, originally published in 1690. First, children learned the alphabet; then, they learned to read two-letter combinations ("ab," "ac," "ad," "af," and so on) and consonant-vowel syllables ("ba," "da," "ca," and so on); next, children were asked to read words containing up to five syllables. Students were drilled on the correct pronunciation for each syllable and the correct spelling of words until they could spell and read short words by sight. Finally, children orally read sentences and stories and afterward answered comprehension questions.

The phonics tradition was heavily used through the early 1800s, when the dominant textbook was *The American Spelling Book*. Published in 1790, this book, like *The New England Primer*, progressed from alphabet to syllables to words. However, whereas *The New England Primer* focused on religious material, *The American Spelling Book* focused on national loyalty and traditions.

During the mid-19th century, there was a swing to the whole-word method. The dominant textbooks were *McGuffey Readers*, which appeared between 1836 and 1844. They systematically introduced a new word by letting the student see the word, hear the word, see a picture or sentence referring to the word, and later spell the word (or break it into sounds). Unlike previous texts, *McGuffey Readers* were a graded series that allowed children to be grouped by age and achievement. By the 1880s emphasis was placed on the reading of fine literature, prompting a return to the phonics method of instruction. The scientific alphabet was introduced in 1902; it consisted of 44 phonemes along with 44 corresponding symbols. Students learned to write sentences phonetically, using these symbols. Other techniques involved teaching students to sound out words before giving any hints with pictures or sentence context.

By the early 1900s scientific research in education was influencing reading instruction. In schools, silent reading rather than oral reading was stressed. For example, as an introductory lesson a teacher might write "Come here" on the blackboard, students would then carry out the commands as written. Emphasis was also placed on getting the meaning out of stories; teachers would question children about their experiences before asking them to read a story. Students learned to recognize whole words before they learned how to break them into parts.

Since the end of World War II, the dominant reading textbooks in American schools have been basal readers. Like *McGuffey Readers*, the modern basal readers are an integrated and graded series of reading books and activities, with each successive book in the series requiring more sophisticated and difficult reading skills. Most basal readers employ aspects of both the whole-word and phonics approach, but according to many critics (Flesch, 1955; Singer, 1981), more attention is given to whole-word methods. For example, Flesch's (1955) famous book *Why Johnny Can't Read and What You Can Do About It* called for a shift back to the phonics method of instruction. Chall (2000) notes that whole-word methods dominated in the early 1900s, reaching their high point in the 1920s; phonics methods made a comeback in the 1960s through the early 1980s; and then the whole-language approach of the late 1980s and 1990s brought back the antiphonics conceptions of the 1920s.

Deciding which method is best for teaching beginning reading has become "the most politicized topic in the field of education" (Adams, 1990, p. 13) and has "led many to characterize the ongoing debate as the reading wars" (Chall, 2000, p. 59). Chall (p. 59) observes that "proponents often base their positions more on ideology than on available scientific and theoretical literature," but argues for "the importance of basing practice on sound theory and research" (p. 64). Fortunately, the debate is informed by a large and fairly consistent research base. In her classic book *Learning to Read: The Great Debate*, Chall (1967) reviewed the available research literature of the era and concluded that children should learn the relation between sounds and letters before they learn to read for content and meaning. A quarter of a century later, in a massive review of research, Adams (1990) came to the same conclusion: "[P]rograms that include some explicit, systematic phonics instruction tend to produce better word reading skills than those that do not" (p. 93). A more recent review of dozens of scientifically rigorous studies continued the same theme (Ehri et al., 2001): "Systematic phonics instruction proved effective and should be implemented as part of literacy programs to teach beginning reading" (p. 393). Although today's reading programs attempt to balance phonics and whole-word approaches, the preponderance of research shows that children need to develop fast and automatic word decoding processes before they can become proficient in reading comprehension. In other words, children must first learn to read (code emphasis) before they can successfully read to learn (meaning emphasis).

As you can see, there has been a sort of battle in American reading instruction between a phonics method that progresses from letters to syllables to words to sentences on one side and a whole-word approach that progresses from meaningful context to words to parts on the other. What is the current status of the "great debate" concerning the merits of phonics and whole-word instruction? Since the 1990s, the alternative to the phonics approach changed somewhat from the whole-word approach to the whole-language philosophy—that is, the idea that students learn best by being immersed in a rich language environment that includes meaningful reading, writing, speaking, and listening (Chall, 2000; Williams, 1994)—but the same debate remains. Williams (1994) aptly summarizes the state of the research as follows: "(a) phonics instruction should be incorporated prominently into beginning reading instruction, and (b) it should by no means be considered the entirety of any reading program" (p. 61). Based on a review of research, Pressley (1998) concludes that "balanced elementary instruction—that is, balancing of whole-language and skills components—seems more defensible than instruction that is only immersion in reading and writing, on the one hand, or predominantly skills driven, on the other" (p. 265).

The next section explores research on an important aspect of the great debate about decoding, *pronunciation strategy effects*, involving the accuracy of decoding words, whereas a later section deals with *automaticity effects*, involving the speed of decoding.

RESEARCH ON DECODING: PRONUNCIATION STRATEGY EFFECTS

As another source of research information, let's return for a moment to the pronunciation task shown in Figure 2–2. Baron (1977) presented pronounceable nonsense words like these to adults, who were asked to pronounce each one and to tell how they decided on the pronunciation. The results indicated that Baron's subjects tended to use three distinct pronunciation strategies. With the similarity strategy, they pronounced a nonsense word so

that it sounded exactly the same as a familiar real word. For example, "BLUD" was pronounced "blood." With the analogy strategy, subjects pronounced the nonsense word so that it partially rhymed with a real word. For example, "ROTION" was pronounced to rhyme with "motion." With the corresponding strategy, subjects used phonetic rules to sound out each part of the word and then blended the sounds together. For example, "SHUD" was pronounced as "sh" for "SH," "ah" for "U," and "d" for "D," yielding "sh-ah-d."

In Baron's study, the most commonly used strategy was the corresponding strategy, in which the word was sounded out. This strategy corresponds to the phonics method of reading instruction in which students learn the relation between letters and sounds. In contrast, the similarity strategy corresponds somewhat to the whole-word method of reading instruction. Finally, the analogy approach seems to involve a compromise that deals with sounds of word parts (phonics) and whole words. An analysis of students' errors in pronunciation tended to favor the analogy strategy as the most effective.

To test the merits of the analogy strategy, Baron (1977) provided explicit training to some students in how to use the analogy strategy to pronounce nonsense words. Students given such analogy strategy training showed a large improvement in pronunciation performance, with errors dropping from 9% to 4%. Baron also showed that training in the analogy strategy can be applied successfully to children as young as 4 years old. For example, students can be taught to pronounce three-letter words ending in "IN" and "AX," such as "TIN" and "TAX," or "PIN" and "WAX," by using rhymes.

There is increasing evidence that beginning readers who have not yet fully mastered phonological decoding are able to read words by analogy (Goswami, 1986; Goswami & Bryant, 1990). In one study, beginning readers received a sheet with a clue word on top, such as "beak," followed by other words and nonwords such as "bean," "beal," "peak," "neak," "lake," and "pake." The teacher pronounced the clue word and then asked the child to read aloud the other words on the sheet. Children performed better in reading words that rhymed with the target, such as "peak" and "neak," than words that shared some word parts, such as "bean" and "beal," or that had little in common with "beak," such as "lake" and "pake." In a follow-up study, Ehri and Robbins (1992) provided additional evidence that "reading unfamiliar words by analogy to known words . . . can be executed by beginners more readily than reading unfamiliar words by phonologically recoding the words" (p. 22).

A first step in building automaticity in English letter-sound combinations is to learn the 42 major sounds in English (as summarized in Table 2–1) and the 26 letters of the alphabet. Next, a student must learn the rules by which letters are related to sounds, but unfortunately the rules relating letters to sounds are far from regular (Clymer, 1963). For example, Clymer generated a list of 45 rules, including those selected for Table 2–4, but most had many exceptions. What is the best way to learn phonological decoding in a language such as English? One promising answer to this question grows out of early work on skill learning, which indicates that the path to automatic decoding includes practice.

IMPLICATIONS FOR INSTRUCTION: DECODING STRATEGY TRAINING

How would you tell if phonics instruction works? Let's suppose you taught one group of students using a phonics method and another group using a conventional method, and you tested students to see what they had learned. To make sure that the effects were not attributable to differences among the students, you could randomly assign

TABLE 2–4 Selected phonics rules for vowels and consonants

Rule	Example	Exception	Consistent Percentage
When there are two vowels, one of which is the final *e*, the first vowel is long and the e is silent.	bone	done	63%
When a word has only one vowel, the vowel sound is short.	hid	kind	57%
When there are two vowels side by side, the long sound of the first one is heard, and the second is silent.	bead	chief	45%
When two of the same consonants are side by side, only one is heard.	carry	suggest	99%
Ch is usually pronounced as it is in *chair*.	catch	machine	95%
When *g* precedes *i* or e, it sounds like *j* in *jump*.	engine	give	64%

Adapted from Clymer (1963).

FIGURE 2–9 Mean effect size for decoding tasks: better decoding with phonics instruction versus nonphonics instruction

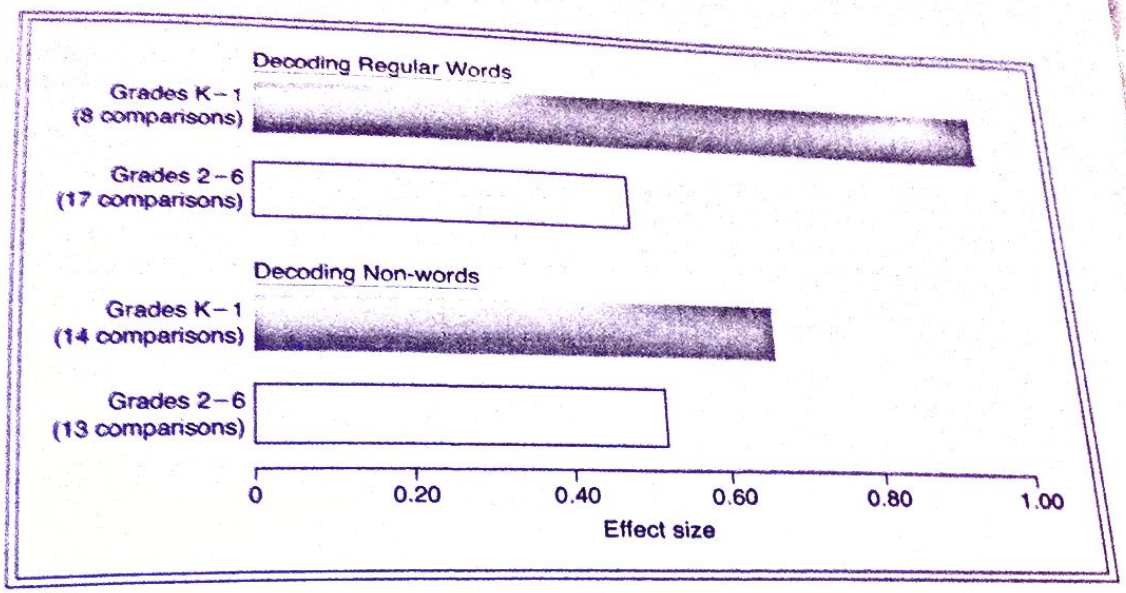
students to groups. To make sure that the tests are valid, they should measure skills that are directly related to the goal of instruction—such as decoding regular words and decoding pseudowords.

This research method allows you to make treatment-control comparisons, so you can see if students in the phonics group (i.e., treatment) performed better on tests than students in the conventional group (i.e., control) on learning to decode. To determine the effect size (labeled *d*) you can subtract the mean score of the control group from the mean score of the treatment group, and divide this difference by the standard deviation of both groups (Cohen, 1988). A positive effect size means that the phonics group learned better, whereas a negative effect size means that control group learned better. An effect size of 0.2 is considered a small effect, 0.5 is considered a medium effect, and 0.8 is considered a large effect (Cohen, 1988), so we will be on the lookout for instructional programs that yield a positive effect size of 0.5 or more. This means that the treatment group scored one half standard deviation greater than the control group—enough of an improvement to have practical importance.

Based on a recent review of research conducted by the National Reading Panel (Ehri et al., 2001), there is overwhelming evidence that "systematic phonics instruction helped children learn to read better than all forms of control group instruction, including whole language" (p. 393). When the outcome measure was accuracy in decoding regular words (in 30 separate comparisons) the effect size favoring phonics was $d = 0.67$, which is considered a medium-to-large effect; when the outcome measure was accuracy in decoding pseudowords (in 38 separate comparisons) the effect size favoring phonics was $d = 0.60$, which is also a medium-to-large effect. The left side of Figure 2–9 shows that the size of the effect for decoding regular words is strongest when the phonics training is done in kindergarten or first grade rather than in second through sixth grades, and the right side shows the same pattern for decoding

FIGURE 2–9

Mean effect size for decoding tasks: better decoding with phonics instruction versus nonphonics instruction



Adapted from Ehri et al. (2001).

pseudowords. Importantly, the positive effects of phonics instruction are strong when compared to all kinds of control instruction including the regular reading curriculum, the basal series instruction, whole-word instruction, or whole-language instruction. Overall, phonics is a beginning reading program that helps students develop an important component skill in reading—decoding words. Although showing phonics is an important early step in reading instruction, Ehri et al. (2001) note that "phonics needs to be combined with other essential instructional components to create a complete and balanced program" (p. 433).

Suppose we asked first- and second-grade teachers to identify four or five children in their class who were having the most difficulty in learning to read. Also suppose that you could arrange to give training in how to decode words to some of these children—training that is intensive (e.g., one-on-one tutoring by reading teachers) and prolonged (e.g., for approximately 100 hours in 50-minute sessions over the course of the school year). Can intensive, prolonged tutoring in word decoding put these children back on track to become successful readers? Blachman et al. (2004) conducted a careful experiment to answer this important question.

At-risk students were selected for decoding training (trained group) or received reading instruction provided normally at their school (control group). For the trained group, each 50-minute session focused on a few target letter-sound rules and involved five steps: (1) a review of symbol-sound correspondences, in which the tutor presented index cards containing selected printed letters or letter combinations with vowels in red ink and asked the child to say the sound; (2) phoneme analysis and blending, in which the tutor asked the child to manipulate printed letters on a board for tasks such as "change fan to fat" or "change shin to shine"; (3) fluency-building activities, in which the child was asked to orally read words printed on index cards that contained the sounds that had just been studied; (4) oral reading, in which the learner and teacher read aloud from a variety of texts such as *Amelia Bedelia*; and (5) dictated words, in which the teacher said a word such as "hike" and asked the child to write it down on paper.

TABLE 2–5

Intensive tutoring in decoding skills improves performance of at-risk readers on reading words, reading nonwords, and comprehension

Group	Score on Reading Words			Score on Reading Nonwords			Score on Comprehension		
	Before	After	Year later	Before	After	Year later	Before	After	Year later
Decoding training group	82.8	88.7	87.3	83.3	90.2	89.5	78.2	88.7	82.8
Control group	84.0	80.4	79.6	82.0	80.0	82.3	78.8	83.7	80.2

Adapted from Blachman et al. (2004).

Table 2–5 shows the children's scores on reading words and nonwords at the beginning and end of the year as well as a year later. As you can see, the students who received decoding training showed strong increases that persisted even a year later, whereas the students who received regular instruction showed no such improvement. In addition, children who received decoding training improved on tests of reading comprehension more than did children who received conventional instruction. Blachman et al. (2004) conclude that at-risk readers benefited from an "intensive, systematic, and explicit program that emphasized phonological and orthographic connections" (p. 454).

In another exemplary study, Compton et al. (2015) identified children in Grades 1 through 5 who had serious difficulty in acquiring word-level reading skills, which led to them being identified as learning disabled. They were receiving standard reading instruction provided by the special education teachers at their school, but you might wonder whether there is a better way to help them develop decoding skills. Some of the students were randomly selected for a phonics-based decoding program developed by Lovett et al. (2000), which included direct instruction and practice in several word identification strategies:

Compare and contrast: Students learn to identify words by analogy (e.g., use the familiar word "rain" to read the unfamiliar word "slain").

Peeling off affixes: Students learn to separate prefixes (e.g., "un-," "re-," "mis-") and suffixes (e.g., "-ment," "-tion," "-ful") in multisyllabic words.

Vowel variation: Students learn to try various ways of pronouncing a problematic vowel (e.g., for "pini" try both the short "i" and the long "i" to see which produces a familiar word).

Seek the part you know: Students seek familiar parts of unfamiliar words (e.g., break "bookmark" into "book" and "mark").

Game plan: Students learn a metacognitive strategy for applying and evaluating word decoding strategies.

Students received 70 hours of training based on lessons lasting 45 minutes per day over a 7-month period. Each lesson was scripted and came with instructional materials developed by Lovett et al. (2000).

Is this systematic phonics training more effective than the regular reading instruction provided by the students' special education teacher? On tests of decoding regular words (word identification), students in the phonics group showed significantly greater improvement than did students in the control group, yielding a large effect size of $d = 1.19$. On tests of decoding nonwords (word attack), students in the phonics group showed significantly greater improvement than did students in the control group, yielding a medium-to-large effect size of $d = 0.66$. Importantly, there was evidence of transfer in which the phonics group also showed larger improvements in reading comprehension as compared to the control group, yielding a large effect size of $d = 1.15$. Overall, the results show that if you have 70 hours to help children improve their decoding skills, they will gain much more from systematic phonics instruction than from their regular reading instruction.

Overall, there is a strong research base showing that children's decoding skills can be improved through systematic phonics instruction.

Decoding Words Fluently

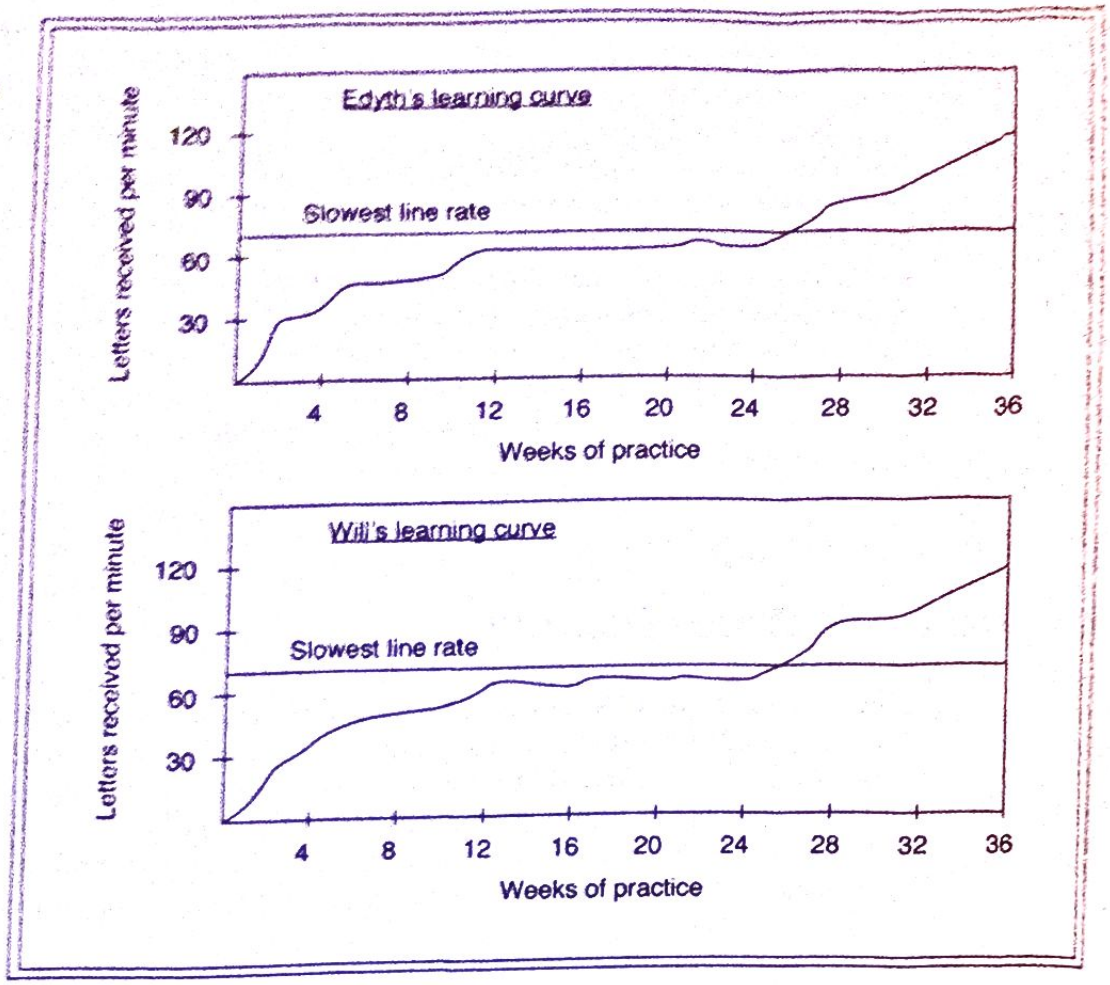
The previous section focused on helping readers decode words accurately, with decoding skill measured as word identification skill (accuracy in reading common words aloud) and word attack skill (accuracy in reading unfamiliar words and pseudowords aloud). A related skill is to be able to read passages aloud with fluency—that is, with proper expression, rhythm, and intonation and without false starts. In short, decoding fluency depends on automaticity: learning to decode words without having to pay attention to what you are doing.

RESEARCH ON FLUENT DECODING: AUTOMATICITY EFFECTS

As a historical introduction to the great debate, consider the following scene. The story begins in the fall of 1895. The place is the Western Union telegraph office in Brookville, Indiana. The characters are an 18-year-old young man named Will Reynolds and a 17 year-old young woman named Edyth Balsley. Both have come to learn to become telegraph operators under the tutelage of the telegraph office's operator, Mr. Balsley. They are bright and eager learners, so by June of 1896, both can send and receive ordinary business letters over the main line. More importantly, during this period both have agreed to be tested once a week on how fast they can send and receive telegraph messages. In doing so, Will and Edyth enter the annals of educational psychology history by becoming participants in what is today widely recognized as the first major psychological study of skill learning (Bryan & Harter, 1897). To measure their receiving speed, the tester gave them a message in Morse code at a certain rate for a 2-minute period; the students' task was to listen to the incoming dots and dashes and write down the message in words. If the students failed to decipher the code correctly, the task was repeated at a slower rate. If the students succeeded, a faster rate was tried. Figure 2–10 shows the number of letters per minute that Will and Edyth could correctly receive on each of the weekly tests from the day they started until they mastered the basics. This is a learning curve, in which the x-axis indicates the amount of practice and the y-axis shows the level of learning.

FIGURE 2–10

Letters per minute Edyth and Will could receive during their first 36 weeks of learning



Adapted from Bryan and Harter (1897).

Bryan and Harter (1897) noted both quantitative and qualitative changes in Will's and Edyth's deciphering skill. These quantitative and qualitative changes constitute an *automaticity effect*—that is, an ability to carry out a task without having to pay attention to each step. First, as you can see in the learning curves, over the course of training both students improved greatly in the speed with which they could decode incoming messages. It took them about 6 months of practice before they could handle messages coming in at the slowest main line rate (71 letters per minute), but within 9 months they could receive 100 words per minute and were on a trajectory of getting faster every week. The increasing speed of the students is evidence that components of their decoding skill were becoming automated; that is, that their conscious attention was no required.

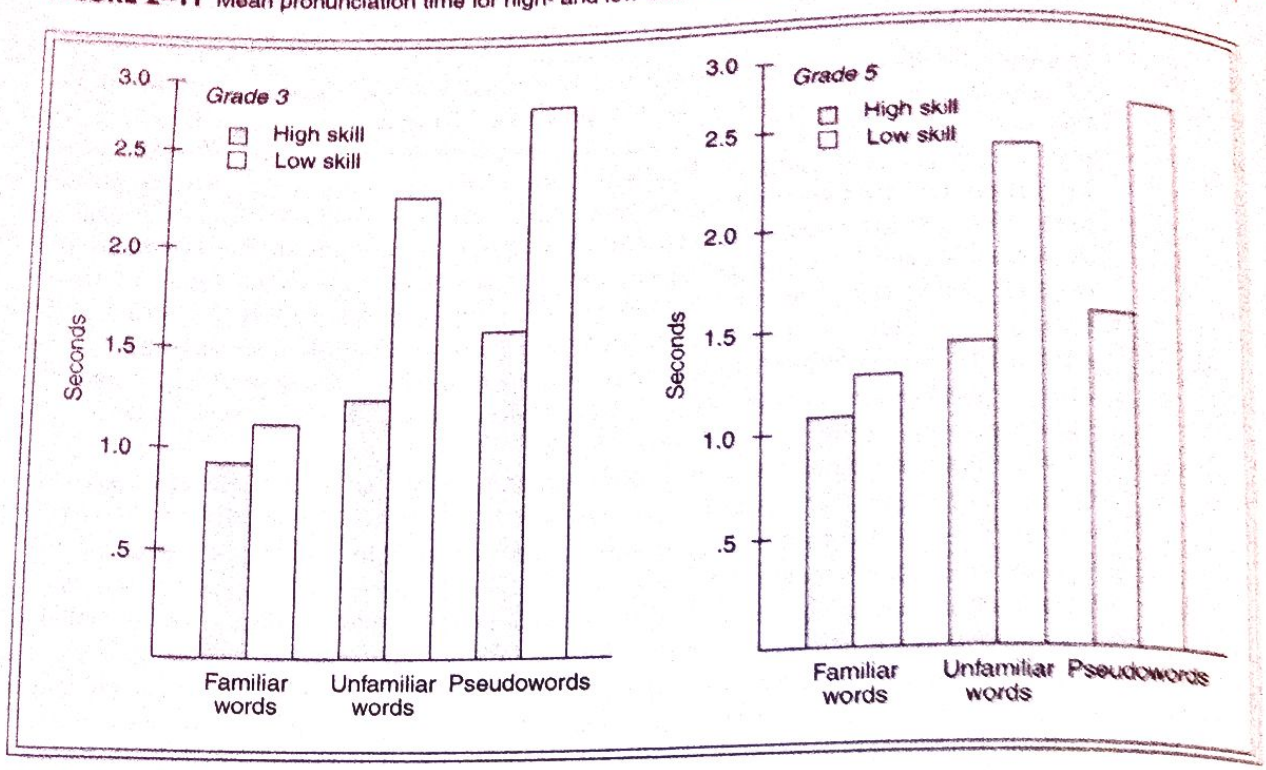
Second, in addition, there was a qualitative change in which the students first translated the code on a letter-by-letter basis, then word-by-word, and finally phrase-by-phrase. According to Bryan and Harter (1897), this qualitative shift is reflected in the observation that both students reached a plateau in the middle of their training—their learning curves became somewhat flat between the 16th and 20th weeks. Bryan and Harter interpreted this pattern as evidence of stages in skill learning: The increase in

speed from the 1st week to the 16th week reflects a phase of increasing skill at decoding individual letters and even short words; the plateau represents a phase of consolidation of letter-decoding skill so that it becomes automatic, and the increase in speed from the 24th week onward represents a shift of focus to decoding by words and phrases. By observing operators as they progressed from novices to experts, Bryan and Harter found that at first they decoded messages letter-by-letter, then after more practice, they began to decode word-by-word, and eventually were able to decode phrase-by-phrase, so that their writing was 6 to 12 words behind the flow of the incoming code. The plateau represents a period in which a component skill—letter-by-letter decoding—reaches its highest speed but is still not completely automatic; once it becomes automatized, it can be used as a component in learning higher order skills such as decoding words and phrases. When novices decoded letter-by-letter, they reported being unaware of the meaning of the message, whereas expert operators who listened to an entire phrase before writing it down stated that they were aware of the meaning of the message.

What can this 19th-century study of telegraph operators tell us about how today's children learn to read? When the famous educational psychologist E. L. Thorndike (1913) examined Bryan and Harter's classic study of skill learning, he was struck by the possibility that "in learning to read (first year primary) . . . one's progress is analogous to that of the student of telegraphy" (p. 100). The crucial event in learning to decipher code—whether it is printed words or the sounds of the Morse code—is the development of automaticity of low-level skills. Accordingly, it is crucial that students develop the ability to recognize the relation between a letter (or letter group) and its sound rapidly and automatically; that is, phonological deciphering must become effortless. This goal is accomplished through practice. Consistent with this view of the development of automaticity of basic skills, many authors propose that students who must consciously monitor their decoding process have less attentional capacity for making inferences and otherwise trying to comprehend the passage (Adams, 1990; Chall, 1967; Perfetti & Lesgold, 1979). In order to investigate this idea, Perfetti and Hogaboam (1975) selected third and fifth graders who either scored low in standardized tests of reading comprehension (below the 30th percentile) or scored high in reading comprehension (above the 60th percentile). Reading comprehension involves being able to answer meaningful questions about a passage you just read. Students were asked to participate in a word-pronunciation task: A word was presented on a screen and the student's job was to say the word as soon as he or she knew what it was. This task requires decoding, but not comprehension.

Some of the words were familiar; as Figure 2–11 shows, skilled and less skilled readers did not differ greatly in their pronunciation times for familiar words. Other words were unfamiliar to the readers; as Figure 2–11 shows, the less skilled readers averaged 1 second longer than the skilled readers. One explanation may be that skilled readers are more familiar with the "unfamiliar" words, perhaps because they spend more time reading more difficult texts. However, Figure 2–11 also shows that the less skilled readers required an average of over 1 second more than the skilled readers to pronounce pseudowords (i.e., nonsense words that could be pronounced). Apparently, skilled readers employ fast and automatic decoding processes, even for words that have no meaning, whereas less skilled readers have great difficulty in decoding words that are not part of their sight-reading vocabulary. These results are consistent with the idea that well-practiced decoding skills allow the reader to use his or her attentional resources to comprehend the passage. In fact,

FIGURE 2–11 Mean pronunciation time for high- and low-skill readers



Adapted from Perfetti and Hogaboam (1975).

fluent readers may be so well practiced in decoding that they are unaware of the rules of pronunciation (Calfee, Chapman, & Venezky, 1972). Apparently, learning efficient decoding skills is a prerequisite for learning efficient comprehension skills.

IMPLICATIONS FOR INSTRUCTION: AUTOMATICITY TRAINING

In addition to becoming accurate in decoding words, students' decoding skills must also become fluent. In developing reading fluency, students become automatic in recognizing letters and sounding out letter groups. In short, a main focus of reading instruction during the first few years of school should be to help students develop decoding skills that are automatic (i.e., that do not require extensive conscious effort by the reader). This section focuses on how to provide training for decoding automaticity.

Stanovich (1980) summarized research on decoding by noting that good readers differ from poor readers mainly in their rapid context-free word recognition. The limited capacity of the memory system requires that if some processes demand a great deal of attention, there will not be adequate attention available for other processes. For example, LaBerge and Samuels (1974) proposed that fluent readers are able to decode text automatically, which means that they have attention available for comprehension processes. In contrast, beginning readers' attention must be devoted mainly to decoding, leaving relatively little processing capacity available for comprehension processing. Perfetti and Hogaboam

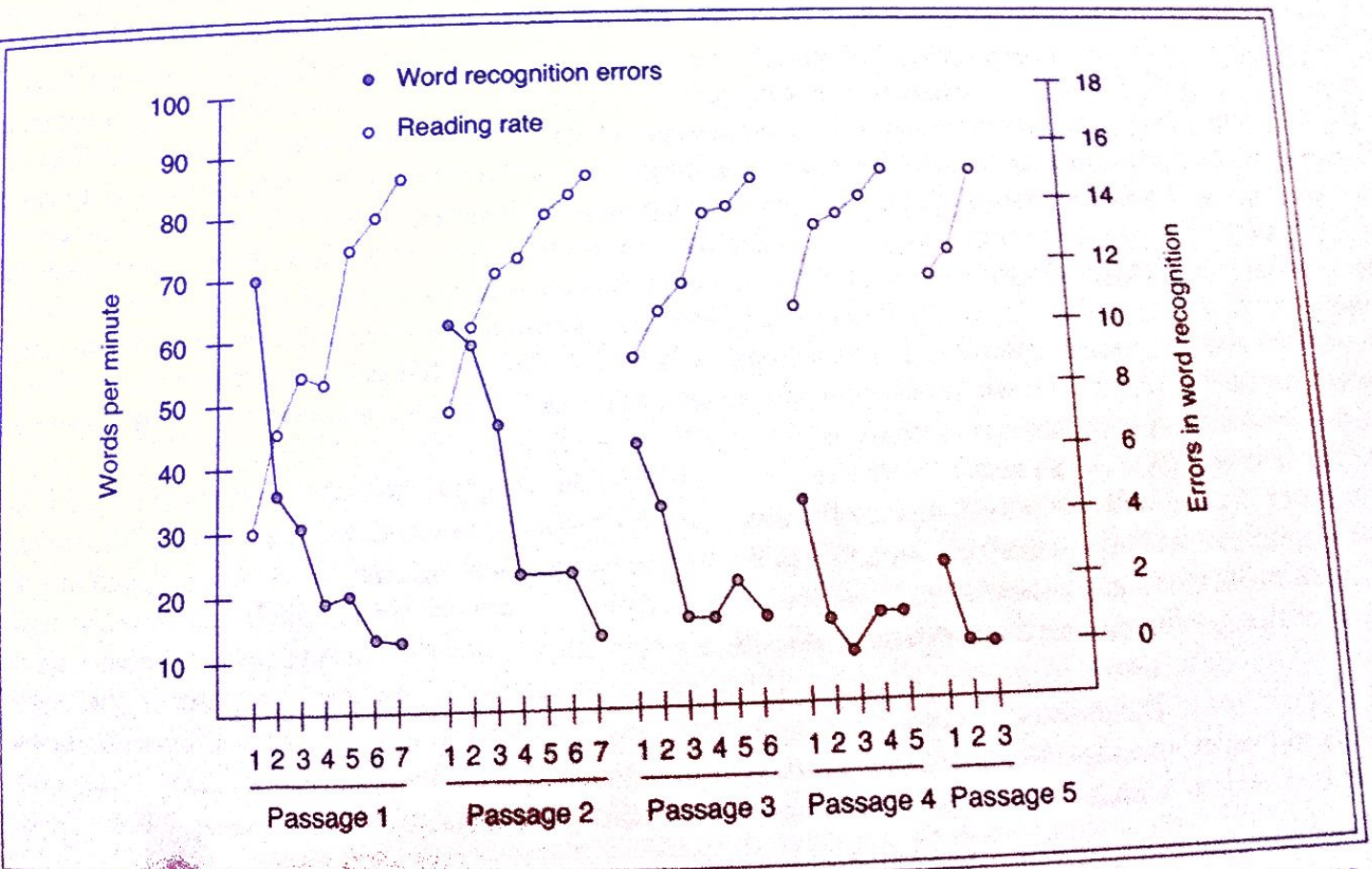
(1975) summarize this idea as follows: "To the extent that decoding is a mainly automatic process, it does not make great demands on the readers' higher comprehension processes" (p. 466).

LaBerge and Samuels (1974) proposed three stages in the development of automaticity:

1. *Nonaccurate stage*—in which the reader makes errors in word recognition.
2. *Accuracy stage*—in which the reader can recognize words correctly but must use great attention to do so.
3. *Automatic stage*—in which the reader can recognize words correctly without requiring attention.

How can we teach students to gain automaticity in decoding? Samuels (1979) suggested a technique called the *method of repeated readings*. According to this technique, a student reads a short, easy passage over and over again until a satisfactory level of fluency is reached. This procedure is repeated for another passage, and so on. Figure 2–12 shows the changes in reading and word recognition rate as a student read five different passages using the method of repeated readings. Two findings are particularly interesting. First, for each passage, the fluency improves greatly with repetition. Second, fluency tends to improve from one passage to the next, even though the words are different. What is the best way to

FIGURE 2–12 Improving decoding fluency by repeated readings



Source: Figure from Samuels, S.J. (1979, January). The method of repeated readings. The Reading Teacher, 32(4) 403–408. Reprinted with permission of the International Reading Association.