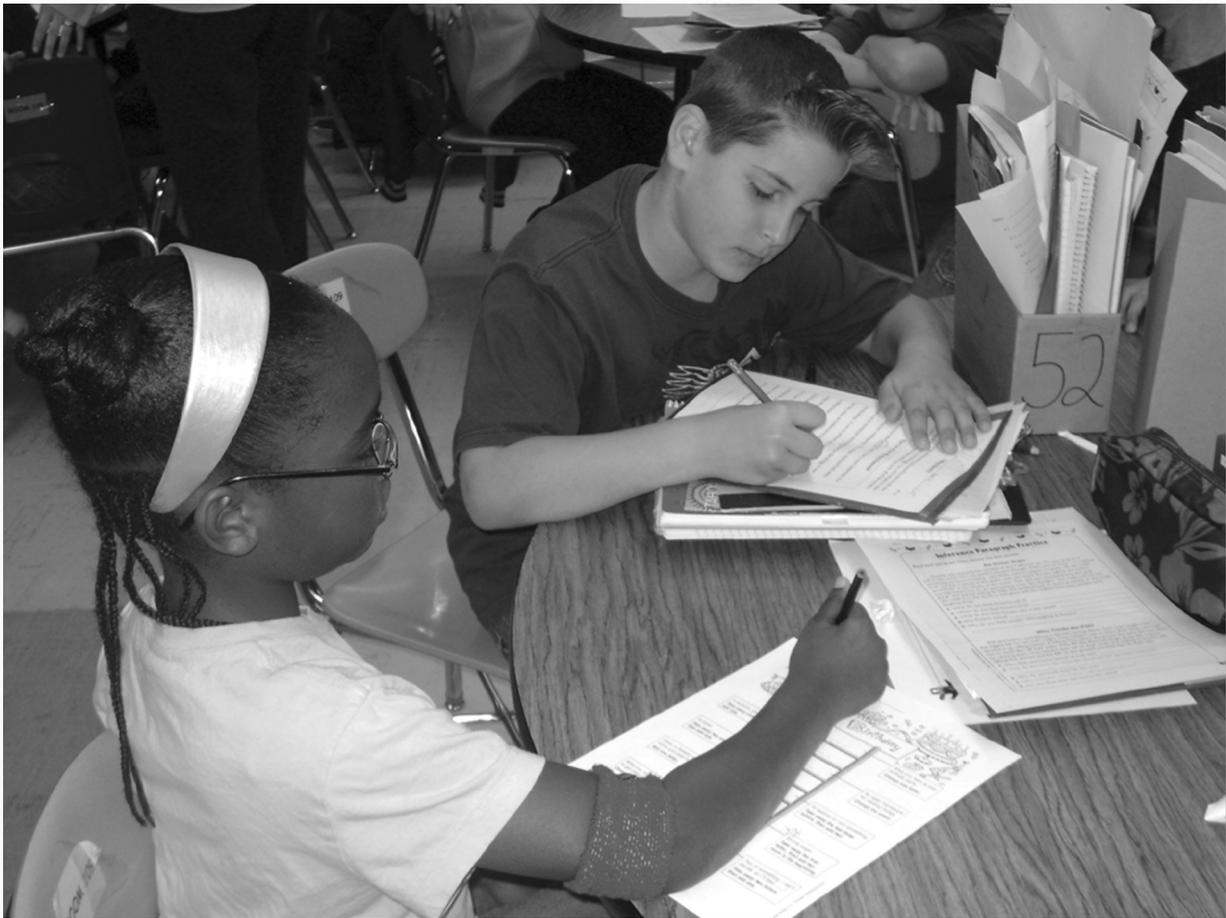


Chapter One

How Learning Happens



CHAPTER OVERVIEW

The good news is that we are wired for learning. Our species has continued this long that we must be designed for survival. So how do we make the most of this penchant for learning? Learning theory after learning theory after learning theory has been offered throughout the ages. This chapter investigates one such theory.

In walking, attaching one step to another gets you somewhere. In learning, attaching one bit of knowledge to another gets you somewhere. When we attach new information to existing information, we construct understanding. Connections between smidgens of knowledge are like scaffolds—you know, those lengths of wood or metal that attach to each other to form a sturdy foundation upon which to work. Generally, the teacher aligns the planks or bars and works to ensure that they are connected in the students' minds. Over time, the scaffolds eventually become bridges from one bit of knowledge to the next.

What are these bits of understanding? All lessons that result in some form of learning contain five parts:

- concepts
- skills
- vocabulary
- strategies
- behaviors

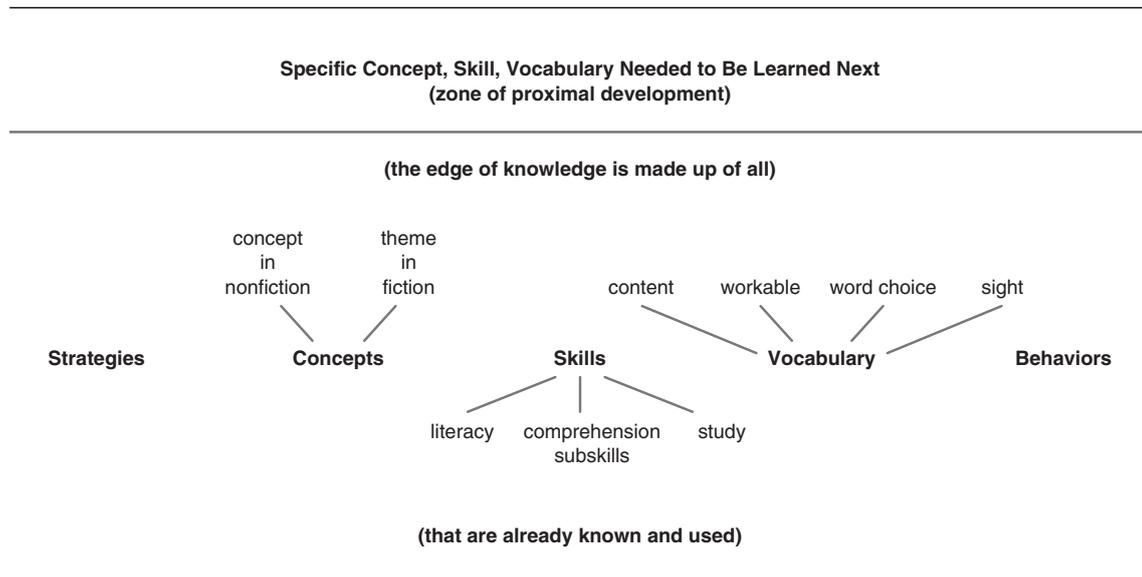
These five elements form current and next learning. In this chapter, we look closely at the first three items on the list. Strategies and behaviors will be discussed in detail in Chapter 3.

LEARNING AS A SCAFFOLDING PROCESS

The bits of understanding that one has control over—that can be used, in other words—form the foundation of current knowledge. Our job as teachers is to determine the specifics of which concepts, skills, vocabulary, and strategies each child has control over and can use. Like all humans, children know a lot more than they use, so we need to assess how much the children use of what they know. We also need to measure the degree to which they use it and the level of alacrity with which they use it.

We have to do these things so that we can know what the child needs *next*. The operative word here is *next*. We cannot provide what children *need* because they need everything. The best we can hope for is to provide what they need *next*. Once we know what they have in place, we can determine which concept, skill, vocabulary, or strategy they need next. The new learning is attached to existing learning. Figure 1.1 illustrates this process.

Figure 1.1 Learning as a Scaffolding Process



CONCEPTS

Concepts are what the children are going to learn about from a particular text. The concept is generally the theme in fiction and the specific content in nonfiction. The teacher needs to be clear about what the children are expected to learn from an instructional text, and should tell them what the book is about. This single simple bit of knowledge arms them with a shelf of understanding prior to encountering the book. Knowing what the book is about sets up an array of expectations and corridors of access, and prepares the reader to interact with the book more deeply and more immediately. Consider the following scenario:

A teacher walks around the room showing everyone the book Charlotte's Web by E. B. White. It is the classic version with the traditional cover. The title is written in spiderweb-like print, and the dominant characters in the story are shown in the cover illustration, with the girl and the pig particularly prominent. The teacher tells the children that this will be their next read-aloud and that she is going to read a chapter every day after lunch. She tells them they will enjoy this story because it is one of her favorites. She reads them the title, the author's name, and the illustrator's name. Then she asks the timeless, universal question: "What do you think this story is about?"

Why do we ask children this question? What are we really asking for? When did this ritual become a good idea? When questioned, teachers generally say something about "having children

use prior knowledge” or “having children make predictions.” But are the children really drawing on prior knowledge? Really predicting? You be the judge.

Suppose one child raises his hand and asks, “Is it about a girl named Charlotte?” Is he drawing on prior knowledge? Is he predicting? He uses the two slivers of information he has: the title of the book, which often provides a hint and in this case contains a girl’s name, and the illustration, which contains a dominant figure who happens to be a girl. He puts those two bits of information together and, using his prior knowledge that Charlotte is a girl’s name, decides that the book must be about a girl. But is *Charlotte’s Web* about a girl? No, as the teacher explains to this little guy, a girl is in the story, but the story is not about that girl. So, was the child predicting? Nope. He was just guessing. He had only those two slivers of information, which were not enough to make an accurate prediction. He *was* using prior knowledge, but not in the way the teacher had hoped.

Suppose another child raises his hand and says, “Is it about a pig named Charlotte?” This child uses three bits of information: the title, the illustration, and his classmate’s error. This fellow discounted the name as strictly a girl’s name and went with the possibility of it being the name of the second dominant figure, the pig. Clever, yes, but still not right. (Not that being right is important.) These children are not even in the ballpark. The teacher knows it is time to move on when the third child raises her hand and asks, “Is it about Charlotte’s Web site?”

So, what is the difference between making predictions and guessing? Guessing happens when we have minimal bits of information. Predictions require personal input. Predictions are *schema* events. Ah, schema—a scary graduate school word! *Merriam-Webster’s* defines it as “a mental codification of experience that includes a particular organized way of perceiving cognitively and responding to a complex situation or set of stimuli.” I prefer my own definition: the sheet of fabric that billows behind us as we walk through life. Everything we encounter either sticks to or slides off the sheet; the stickier our sheet, the more that adheres—events, impressions, everything. The more that sticks, the stickier our sheet becomes. What lingers on our schema sheet serves as a sieve, shaping all thoughts and ideas as they pass through.

So predictions, as opposed to guesses, are based on more than fragments of data. But back to the Charlotte. . . . What is *Charlotte’s Web* about? No, it is not about a spider either! The girl, the pig, and the spider are all characters, and like most stories, the book is not about characters. Stories are generally about something bigger than the characters—an idea, a theme. This concept is what the characters live in, work toward, demonstrate, personify. *Charlotte’s Web* is about friendship. There, *that’s* the concept: friendship, and all that is friendship.

Think about how the children might have responded if the teacher had told them, “This is a story about friendship.” Their brains would have done a file search for “friendship” and come back with all sorts of friendship-related ideas and experiences. They would have been so much better prepared to make predictions. Their thinking would have been so much more centered and driven.

Now, back to our scenario. Let’s suppose the teacher has finally let on that the book is about friendship. The conventional question at this point would be something like, “Have you ever had a friend?” Now why in the world would anyone ask such a thing? Of course the children have had a friend. Instead of asking a “have you ever” question, we need to go directly to the point and tell the children, “You know about friendship.” This focuses their thinking and immediately engages them, rather than causing them to ponder a yes-or-no question. At this point, when the children are wrapped up in the idea, the teacher needs to say, “Tell me what you know about friendship.” Here the children begin to share relevant experiences, define friendship, describe friends, and pretty much build a profile of what it all means. Now they are ready to make predictions—predictions that are on target and meaningful. *This* is powerful thinking. *This* builds on the existing scaffolding—it sets the stage for learning.

SKILLS

Skills are behaviors we learn that we can use for a greater good. They are useful only within a context: learning skills in isolation makes them useful only in isolation. Skills are nuts and bolts that enable us to hold together words, sentences, paragraphs, stories, ideas, and understandings. Having control of

skills enables us to process more information, and to process it more accurately and quickly. We will discuss three types of skills here: literacy skills, study skills, and comprehending skills.

Literacy Skills

Literacy skills fall into several subsets—reading skills, writing skills, listening skills, and speaking skills—but the skills in the various subsets are reciprocal. In other words, reading skills are used in writing, and speaking skills are used in listening. All of these skills are taught and learned throughout all the grades, but in this chapter we focus on reading skills. These are identified teaching points and features to note within a context when we are conducting reading and writing lessons. Some reading literacy skills are listed in Box 1.1.

Box 1.1 Examples of Literacy Skills

Abbreviations	Digraphs	Possessives
Alphabetical order	Diphthongs	Prefixes
Apostrophes	Grammar	Punctuation
Blends	Letter names	Root words
Capitalization	Morphemes	Suffixes
Compound words	Phonemes	Syllabication
Contractions	Plurals	Verb tenses

Literacy skills are explicit and rather minute. They include the names of individual letters, the sounds we give those letters and letter combinations (also known as phonics), and the ways we arrange those combinations of letters to form words (also known as spelling). They include the mechanics of how to wrangle words into phrases and sentences (also known as grammar), and how to delineate those sentences as organized masses (also known as punctuation).

Literacy skills include puzzles about words that look alike but sound different and mean different things, as well as words that look different but sound alike. They allow us to break a word when we run out of room in a line, and to work through a word using chunks of letters. They make it possible to change the meaning of a word by adding letters to the front or the end of it, and to recognize the heart of a word that has additional bits stuck to the front and the end.

While literacy skills are tiny, isolated bits of information, the role they play in language is huge. They permit us to designate some words as more important than others. They allow us to talk about many of something, rather than just one. Literacy skills include the bits of information that enable us to refer to events that happened in the past as well as those that will happen at some point in the future. They allow us to own things.

“Do we still teach skills?” folks ask. We never stopped teaching skills. Today, however, we recognize the importance of helping children *use* the skills they are learning.

Study Skills

Study skills enable children to interact with texts in ways that strengthen understanding and provide vehicles for expressing that understanding. Study skills help children to do five things:

- locate information
- record that information
- retrieve that information
- manipulate (move) that information
- use that information

The nature of the information involved depends to a large extent on the subject matter as well as the motivation for learning. Box 1.2 presents a partial list of the kinds of information that study skills enable children to gather and use when reading or learning to read.

Box 1.2 Types of Information Targeted by Study Skills

Character traits and indicators	Key words
Definitions	Plot points
Details	Word explanations
Evidence of setting	

Children who learn how to *locate* information in a book are prepared to ferret out the specifics of the author's intent. These children have greater control over working through the unknown. A primary source for locating information in a book is the table of contents. In addition, elements such as the index, the glossary, headings, footnotes, sidebars, callouts, and captions are all sources for locating information in nonfiction texts.

Once students have located information, they need to be able to *record* or mark it in some way. Some useful tools for this are highlighter tape, erasable highlighter pens, sticky notes, and temporary glue sticks with adding machine tape. These tools enable students to temporarily mark the information at its source on the page.

When the book is closed, the information disappears into it. At some point, however, that information will be needed again. The third function of study skills is to enable children to *retrieve* information already found and marked. An effective tool to use for this is edge tabs, or sticky notes that hang out from the edge of the book. Every time a child marks a word or phrase in the text, he or she copies that same word or phrase, and the page number, onto a sticky note and places it in the margin. The result is what kids call a "hairy book." The edge tabs help the children to quickly retrieve the bits of information.

After the information has been placed on the edge tabs, the tabs can be peeled from the book pages and moved to another place. This process enables the reader to *manipulate* the information. Manipulating the information means changing its place and purpose. For example, the edge tabs can be organized into a list, can be used to build an outline, or can form the basis for note cards. Such flexibility with information is empowering. The reader now owns that information and is able to put it to use.

The whole reason for teaching children study skills is so they will be able to *use* the information they have found. For example, the outline and note cards mentioned above can be used to write a report. Nonfiction key word edge tabs can be alphabetized and evolve into a glossary or index. Key words can also be used to write captions, footnotes, or sidebars. For fiction, key word edge tabs for character traits can be used to design a character map. Storyboards and time lines can be diagrammed using key word edge tabs for dimensions of setting and plot points.

Comprehending Skills

Comprehending what has been read is the reason we teach reading. Our work and that of the children is not about the reading, and never has been. The work is about the *thinking*. Nothing matters if the children do not know what it is they have read.

Comprehending is conjuring an image from the author's words and the reader's experiences. It is maintaining that image, shifting it as the words and experiences indicate. Comprehending remains intact as long as the reader sustains the image and realizes when the image breaks.

Comprehending requires taking mental action with the text. Box 1.3 shows a list of some of the forms of comprehending. (Notice that each word is a verb; comprehending skills involve the reader in interacting with the text or taking action with the author's meaning.)

Box 1.3 Examples of Comprehending Skills

Knowledge—gathering information; on the page; see it and do it (on the page)

Count/Quantify	List	Practice	Sequence
Define	Match	Recall	State
Describe	Measure	Recite	Tell
Draw/Illustrate	Memorize	Recognize	Trace
Find/Locate	Name	Recognize patterns	Write
Identify	Observe	Record	
Label	Outline	Remember	

Comprehension—confirming and connecting (in the head)

Change	Explain	Interpret	Recognize errors
Clarify	Extend	Model	Relate
Confirm	Generalize	Paraphrase	Re-state
Connect	Infer	Plan	Summarize
Distinguish	Inquire	Predict	Verify
Expand	Instruct	Prove	

Application—making use of knowledge (with the head and hands)

Apply	Dramatize	Hypothesize	Relate
Change	Draw/Sketch/Paint	Make	Show
Choose	Experiment	Model	Simulate
Collect	Explain	Modify	Solve
Demonstrate	Express	Predict	Visualize
Design	Formulate	Prepare	
Diagram	Gather alternatives	Produce	
Discover	Generate	Quantify	
Discuss	Graph	Question	

Analysis—taking apart (with the head and hands)

Analyze errors	Determine	Investigate	Select
Categorize	Differentiate	Organize	Separate
Classify	Dissect	Point out	Sort
Compare	Distinguish	Problem solve	Subdivide
Contrast	Examine	Qualify	Survey
Decide alternatives	Graph	Research	Take apart
Deconstruct	Infer	Revise	

Synthesis—reducing, combining (with the head and hands)

Add to	Design	Invent	Rationalize
Combine	Develop	Originate	Summarize
Conclude	Formulate	Organize	Synthesize
Construct	Generalize	Plan	
Deduct	Hypothesize	Produce	

Evaluation—judging, value laden (with the heart)

Appraise	Contest	Establish a position	Reason
Apprise	Criticize	Evaluate	Recommend
Argue a position	Critique	Judge	Relate
Assess	Defend	Qualify	Weigh
Consider	Develop an opinion	Rationalize	

Guided reading lessons for children learning to read focus on strategy building, which enables children to make the meaning or read the words. Strategies form the foundation for comprehending. They help children to self-monitor—to recognize when the meaning breaks down or the text isn't making sense.

Once children can read and have begun to master the strategies they need to self-monitor, the focus of reading instruction shifts from the making of meaning to comprehending the layers of meaning within the text. Transitional guided reading, the instructional practice that follows guided reading, focuses on tying the reader's mind to the text. In transitional guided reading lessons, the teacher focuses the children's thinking on one or two specific elements in each paragraph, setting them up to read for a particular purpose in that paragraph. The children read silently and then debrief the focal point with the teacher, who next sets them up to read and think through the following paragraph. In this way, teacher and children work through the text, with the teacher laying the framework for comprehension *before* reading, rather than waiting to check comprehension afterward.

Vocabulary

Words have always been the stuff of reading instruction. While there are many types of vocabulary, we will discuss four here: sight words, workable words, content words, and word choice.

Sight Words

Sight words are toeholds in a mountain of unknown text—those words that are automatically readable. They are the words the reader recognizes. Sight words include environmental words as well as words that have personal meaning to the reader. Environmental words might be words on fast-food containers; words on bags from shopping trips; the names on cereal, cookie, and cracker boxes; the names of favorite shops and food places; or other automatically recognized words. Word walls, word banks, and full-sentence labels around the room help increase the number of sight words over which a child has control.

Workable Words

Workable words are those words a child can work through. There are many ways to work through a word. While working through words involves reliance on literacy skills, sounding the words out is only one way to figure out the words. Only about 60 percent of the words can be decoded in the English we speak. (That might sound like a lot, but 60 percent is rarely enough to make and maintain meaning.) In guided reading, emergent readers learn a repertoire of strategies that enable them to use all the sources of information to work through words. Early readers use those strategies in guided reading, and practice makes strategy use more and more automatic.

Content Words

Content words are those words directly related to a concept. It is generally easy to locate content vocabulary in nonfiction text as often the words are indicated in bold or italic print, or the book may have an index or a glossary. In fiction, the content words deal with the concept or theme of the story. Content vocabulary in fiction can be found in words used to indicate characters, setting, and plot. Words or phrases, even scenarios, that indicate a concept such as courage or adventure are examples of content vocabulary in fiction text.

Word Choice

Word choice refers to the conscious decisions a writer makes to use one word over another. Beautiful language, such as a well-placed adjective or colorful metaphor, represents word choice, as does powerful language such as strong verbs. While beauty is in the eye of the beholder, the teacher can shape what children identify as beautiful language and powerful verbs. The more we point out examples while reading, the more likely the children are to take note of what they see as beautiful or powerful language. Over time, children begin to assimilate what they are learning, and we begin to see evidence of word choice in their own speaking and writing.