

# Contents

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Acknowledgments	vii
About the Author	viii
Introduction	1
 Strategy 1: Brainstorming and Discussion	15
 Strategy 2: Drawing and Artwork	28
 Strategy 3: Field Trips	35
 Strategy 4: Games	40
 Strategy 5: Graphic Organizers, Semantic Maps, and Word Webs	47
 Strategy 6: Humor	59
 Strategy 7: Manipulatives, Experiments, Labs, and Models	66
 Strategy 8: Metaphors, Analogies, and Similes	73
 Strategy 9: Mnemonic Devices	79

	<b>Strategy 10: Movement</b>	<b>86</b>
	<b>Strategy 11: Music, Rhythm, Rhyme, and Rap</b>	<b>95</b>
	<b>Strategy 12: Project-Based and Problem-Based Instruction</b>	<b>102</b>
	<b>Strategy 13: Reciprocal Teaching and Cooperative Learning</b>	<b>109</b>
	<b>Strategy 14: Role Plays, Drama, Pantomimes, and Charades</b>	<b>116</b>
	<b>Strategy 15: Storytelling</b>	<b>122</b>
	<b>Strategy 16: Technology</b>	<b>130</b>
	<b>Strategy 17: Visualization and Guided Imagery</b>	<b>135</b>
	<b>Strategy 18: Visuals</b>	<b>141</b>
	<b>Strategy 19: Work Study and Apprenticeships</b>	<b>147</b>
	<b>Strategy 20: Writing and Journals</b>	<b>153</b>
	<b>Resource A: Brain-Compatible Lesson Design</b>	<b>159</b>
	<b>Resource B: Graphic Organizers</b>	<b>167</b>
	<b>Bibliography</b>	<b>176</b>
	<b>Index</b>	<b>183</b>

# Introduction

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One of my jobs as the language arts coordinator for a major school district was to observe teachers in an effort to assist them in improving their language arts instruction. As I sat in the back of classrooms of *gifted* students, I witnessed them engaged in authentic tasks that provided them with real reasons to read and to write. In the classrooms of many *struggling* students, I saw boys and girls completing worksheet after worksheet after worksheet. In one class they were even called Worksheet Fun Packets (which is, by the way, an oxymoron). There is no such thing as a Worksheet Fun Packet! I asked myself, *What is wrong with this picture?* It appears that the students whose brains needed enriching the most were not the ones being enriched. Follow me as I describe my walk through two very different classrooms, both teaching the same language arts standard.

## WORST SCENARIO ■

Today's lesson at Livingston Middle School, in the sixth-grade class of Marvin Wiley, involves having students determine the central, or main, idea of a text and how that central idea is conveyed in specific details found within the text. As you enter the classroom, you will note that students are not rushing to their seats but are instead milling around in the hall, reluctant to come inside. Mr. Wiley is far from their favorite teacher. The bell rings and Mr. Wiley orders students inside the room. While he is checking the roll, students are talking to one another. The sound becomes so loud that Mr. Wiley is compelled to shout for all students to *be quiet!* The noise subsides temporarily and then resumes, only louder than before. Ten minutes have passed and the lesson has not yet begun.

Mr. Wiley takes a seat at his desk and asks a student to pass out the first round of papers. When every student has a stack, he explains that the first part of the period will be spent reading the poems on the sheets and writing down the main idea of each poem. He reminds them that they will have to refer to the text to figure out the main idea. He demands that they not talk during class. Mr. Wiley then takes a seat at his desk and begins to write. It appears as if he is grading papers. He glances up to reprimand specific students who are talking although he has demanded absolute silence. He tells those students that they will have to see him after school.

Twenty minutes later, the majority of students are still at various points in their packets. Some have given up and laid their heads on their desks because the poems are too difficult to understand. Others are fuming because they will be joining Mr. Wiley after school. The students are asked to stop reading silently and give Mr. Wiley their undivided attention. He begins by having students take turns reading the poems aloud. He then asks the main idea of the first poem. When no one responds, he gives the answer himself. He continues with the remaining poems, but he is the only one doing the talking.

## ■ BEST SCENARIO

Becky Davis, a sixth-grade teacher at John F. Kennedy Middle School, is teaching the same standard: having students identify the main idea of the text and determining how the details convey that main idea. Mrs. Davis and one student are standing at her classroom door greeting her students as they arrive. This student will greet the class for one week; then it will become another student's turn. As students enter, classical music is playing softly. Students know the ritual: take their seats and look for the sponge activity that will be on the board.

Today's sponge activity necessitates that students illustrate the previously taught vocabulary words from a poem that has been read and discussed. When the bell rings, the music is turned off and the lesson for the day is introduced. Students are told that by the end of the lesson, they will have the answer to the following question: *What is the main idea of this article and what specific details in the article let you know that this is the main idea?* Mrs. Davis begins by telling the students that a main idea is very much like a text or Twitter message. One must give the gist of the message because to say too much becomes too expensive. Today, students will work in groups to write a text message that gives the main idea, or gist, of an article. She tells students that when they get into the world of work, they will be required to do lots of reading of informational text and must be able to determine the gist, or central idea. Therefore, they need to practice that skill now.

Students are then introduced to an article to read silently and given a specific period of time to read it. Following silent reading, Mrs. Davis reads the article aloud to the students while they track the print in their books. During one part she uses the cloze reading procedure, in which she omits a word in the text and the class supplies the omitted word. In other sections she pauses to discuss content-specific vocabulary words with students and poses questions for discussion.

Mrs. Davis has also formulated some additional questions that can only be answered by rereading the text. Students work in cooperative groups to locate the answers. Each group has small Post-it notes that they can place on parts of the text to provide evidence that answers the assigned questions. This part of class ends with a whole-class discussion during which the facilitator of each group provides the group's answers.

The remainder of class time is spent having students work in groups to prepare either the prosecution or defense for T. J. Avery, a major character from Mildred Taylor's *Roll of Thunder, Hear My Cry*. This information will be used in a role play of Avery's trial later in the week.

## LANGUAGE ARTS INSTRUCTION ■

I don't remember learning to read. It seems to me that I was born reading because I don't recall a time when I couldn't. I was fortunate to have been born into a family that valued education and the love of books. I was surrounded by books, and from an early age relatives read aloud to me. My family read and reread nursery rhymes and fairy tales until I memorized every line. Eventually, I began to read them for myself. One of my favorite books was *Millions of Cats*. I don't know why I loved that book as a child, because I grew up around dogs, not cats, but I fondly remember that one as one of the many books I treasured.

There are specific foundational skills that are essential to an effective reading program. Many students are fortunate enough to come to school like me, having already acquired these foundational skills. They are already reading. For them, it is not necessary to teach what they already know. Others, however, will either never have been taught these skills or will need additional help in acquiring them.

For these students, the following sections of phonemic awareness and phonics are crucial.

### Phonemic Awareness

A phoneme is defined as the smallest unit comprising spoken language. In the English language, there appear to be fifty phonemes. In fact, before excited parents hear their baby say *mama* and *dada*, that baby has already said forty-seven other phonemes. Unfortunately, none of the other phonemes the baby says gains quite the attention of those two magical words that all parents love to hear.

Alphabet recognition and phonemic awareness—the ability of the student to focus on or manipulate phonemes in spoken words—have been identified by correlational studies as the two best predictors of how well students will acquire reading skills during their first two years of school (National Reading Panel, 2000). In a meta-analysis of early literacy studies, the National Early Literacy Panel (2008) concurred that teaching the alphabet or simple phonics tasks enhanced the effects of phonemic awareness training.

Research has shown that in the area of phonemic awareness, focusing on blending and segmenting is probably time well spent. Phonemic blending occurs when students can listen for individual sounds and blend them into a known word. An example of phonemic blending would be the following: *What is the following word: /s/ /p/ /u/ /l/?* (spool). Phonemic segmentation occurs when students are asked to count or mark the individual sounds in a word. An example is as follows: *How many different phonemes do you hear in the word drop?*

Some activities in this book will be instrumental in incorporating brain-compatible strategies to help students acquire phonemic awareness skills. Students do not realize that while they are listening to stories, playing games, working with a partner, or singing a song, they are actually laying the foundation for the acquisition of such pre-reading skills.

## Phonics

What we know today is that although effective phonics instruction is but one of the building blocks in a complete reading program, it is a foundational building block. It enables the reader to decode rapidly the pronunciation of unknown words so that comprehension is not negatively affected (Wolfe & Nevills, 2004).

Building that decoding pathway in the brain of a child is the major job of the early years in school. However, if upper elementary and high school students come to school without the necessary automaticity and fluency, the deficit has to be addressed (Nevills, 2011a).

Louisa Moats (1998), an expert in the area of reading, encourages teaching students the differences in sounds first and then teaching them to attach a letter or letters to the sound, rather than vice versa. In this way students can blend and segment onsets (the syllable part before the vowel) and rimes (the syllable part after the vowel) of single-syllable spoken words. For example, if students know the rules governing words such as *mat*, *van*, or *bake*, then they can pronounce words such as *cat*, *man*, and *take*.

Since the brain is a pattern maker, it is better to have students look for and identify patterns such as common letter blends (/bl/, /shr/, /tw/), vowel graphemes (/eigh/, /ou/, and /ai/) and word families (base words such as *believe* and affixes such as *unbelievable*) rather than having them sound out words letter by letter (Wolfe & Nevills, 2004). Longer words should be divided into chunks called syllables.

In summary, exemplary phonics instruction includes the following nine elements:

1. Builds on what a child already knows about how print functions
2. Builds on a child's knowledge of phonemic awareness
3. Is explained in a very clear and direct way
4. Is one part of a total, complete reading program
5. Is applied to reading words, not just learning rules
6. May include the instruction of onsets and rimes
7. Could include practice in invented spelling
8. Develops word recognition strategies that enable a child to examine the patterns in words closely
9. Develops word recognition skills that are automatic so that students can concentrate on comprehension, not decoding (Stahl, 1992).

## Fluency

Have you ever listened as a person reads orally in a monotone, laborious fashion? In no time at all, you begin to lose interest in what is being read, and your comprehension is probably nonexistent. This reader lacks fluency and, besides that, probably has little or no understanding of what is being read.

The term *fluency* has been defined in a variety of ways, including as *the freedom from word identification problems that might hinder comprehension* (Harris & Hodges, 1995) or as *the ability to read at a rate appropriate for accuracy, smoothness, phrasing, expressiveness, and intonation* (Anderson, 2004). Fluent readers are capable of concentrating their efforts on comprehension because they are able to make connections between the ideas presented in the text and their own background knowledge. Readers who are not fluent have little time left for comprehending because their efforts go toward decoding separate words (Partnership for Reading, 2001). After all, research tells us that the brain can only pay *conscious* attention to one thing at a time. If that conscious thing is decoding individual words, then little time and effort is left over for understanding what is being read.

Fluency is not a constant for a reader; it changes based not only on familiarity with the words, but also on the complexity of the text itself and the number of repetitions. For example, a student who has no difficulty reading a novel of interest with expression and automaticity may have less ease dealing with the text from a highly technical manual or physics book.

Chapman and King (2003) delineated a number of elements for developing a fluent reader. These include exposing the reader to enthusiastic, expressive models of reading; using meaningful activities before, during, and after reading to develop understanding; engaging the student in high-interest reading materials written on an appropriate level; and using a variety of active engagement strategies such as the ones described in this book.

## Vocabulary Development

Vocabulary appears crucial in learning to read. In fact, deficits in the vocabulary of low socioeconomic students seem to be one of the primary causes of academic failure (Anderson, 2004). Mixed results seem to exist, however, when attempting to ascertain exactly how crucial it is to teach vocabulary separate from comprehension. Recent research places more emphasis on the total act of comprehension rather than vocabulary instruction alone (National Reading Panel, 2000).

There are various categories of vocabulary. Receptive vocabulary refers to those words that can be understood by the student when others are speaking or writing. Expressive or productive vocabulary refers to those words the student uses with facility when personally speaking or writing (McEwan, 2009).

A teacher cannot and should not teach all unfamiliar words in a text for the following reasons: (1) the number of unfamiliar words may be too

great or time-consuming to teach, (2) not every unfamiliar word is crucial to a student's comprehension of the text, and (3) students need opportunities to use vocabulary strategies to learn words on their own (Partnership for Reading, 2001). Therefore, there are several factors which determine which categories of words are worth teaching.

- Category 1: These are words that most native English speakers learn in the early grades or prior to coming to school. Children whose parents spend a great deal of time talking to and with them will have learned a lot of vocabulary in this category. My grandchildren know many words simply because their parents talk to them constantly, putting labels on what they see daily in the real world. In fact, according to McEwan (2009), one of the biggest obstacles teachers have to face is the vast differences in language development that exist between various subgroups in the student population. Students who are not native speakers will have to pay particular attention to this category of words.
- Category 2: These words are encountered more frequently when students are reading text than when they are speaking. They tend to constitute academic ways to say more simple things. Examples would be *responded* instead of *said*, *amble* instead of *walk*, or *exuberant* instead of *happy*. Children who read a great deal are naturally exposed to many of these types of words. However, these words are not found in a particular discipline and are probably not defined within the context of the text. Teachers need to decide which of these words will require special attention prior to or during the reading.
- Category 3: This third type of vocabulary is specific to a particular content area or field of study and is closely tied to comprehension. For example, in social studies a word in this category could be *immigration*; in science, *mitosis*; in English, *alliteration*; or in technical subjects, *carburetor*. These words, found predominately in informational texts, are considered difficult by most students and may need to be directly taught either prior to or during the reading. Oftentimes support for these words comes from context clues in the text itself or from a glossary provided within the text.

Once students have had the opportunity to discuss, role-play, or storytell their way to vocabulary acquisition, comprehension and reading achievement increase, regardless of the category in which the vocabulary falls.

## Text Comprehension

Have you ever heard someone say, *I read that passage but I don't remember a thing I read*? Without understanding and memory, has any true reading actually occurred?

Prior to the 1970s, reading comprehension was viewed as more of a passive than an active process. Teachers were spending little time on direct instruction in this area. According to Delores Durkin's (1978–1979)

observational studies, of the 4,469 minutes of observed reading instruction in fourth grade, only twenty minutes were spent in direct comprehension instruction. In 2004 Wolfe and Nevills (p. 156) defined comprehension as the active *process of attaching meaning to written or spoken language by accessing previously stored experience or knowledge*.

For students to be successful in learning, they must actually want to learn! Instinctively we have always known this, but there is actually a physiological reason for whether students choose to comprehend instruction. The basal ganglia acts like a policeman that protects the brain from distracting input. Information that has been selected as worthy of being learned flows through fibers back to the thalamus and on to areas of the brain where the information can be interpreted (Nevills & Wolfe, 2009). Working memory then depends upon whether students' brains rehearse what they are learning and connect it to what they already know. If that is the case, then students are consciously selecting the content on which they wish to focus their efforts, and teachers cannot force them to do differently. All teachers can do is make the information appealing enough so that students will want to learn it.

There is evidence that current standards and objectives, curriculum, and instructional practices have not equipped students to read the complex text independently that will be required for college and career readiness (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010). Once a student graduates from high school, at least 70 percent of everything he or she will read will be informational text. An inability to read these complex texts will prevent Americans from meeting the rigorous demands of a democratic republic and competing globally in the marketplace of goods, services, and ideas (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010).

Students should be reading both literary and informational texts in the lower grades, and that amount should increase in the middle and high school grades. Several aspects of text complexity will impact students' comprehension. Texts with one- and two-syllable words are easier to comprehend than texts with many multisyllabic words. In fact, words with three or more syllables actually occupy more working memory in the brain. Literary texts in which there is only one level of meaning are easier to read than those with multiple levels. Informational text in which the message is explicitly stated is easier to comprehend than that in which the message is implicit or inferential. Texts which have a single level of meaning or an explicitly stated purpose are easier to comprehend than those that have multiple meanings or purposes. Texts with literal, clear, or conversational language are easier to read than those with language that is figurative, academic, or content specific. Texts that do not rely on the reader's life experiences or content knowledge are less complicated than those that assume that students have had rich life experiences and possess vast knowledge of content.

The more one reads, the better one reads! Students, therefore, must read from a wide array of high-quality and increasingly challenging literary and

informational texts. For comprehension not to be compromised, all students will require a great deal of additional support or scaffolding, with some students requiring more than others. When selecting texts, the interest, motivation, knowledge, and experiences of students must be considered.

According to McEwan (2009), there are six strategic cognitive strategies that facilitate comprehension for *all* students:

- *Activating*—Recalling what a student already knows about a subject and connecting it to what is being read not only increases student attention and motivation, but also greatly increases the likelihood that students will comprehend and remember the content.
- *Inferring*—When students are taught to infer, they learn to put together three sources of information: (1) what is actually written in the text, (2) what is not written in the text, and (3) what is already known by the reader that will help him or her get meaning from the text.
- *Monitoring-clarifying*—Students monitor and clarify when they think about what they are reading, both during and after reading, and figure out and fix what is wrong.
- *Questioning*—Specific instruction should be provided for students in how to ask and answer questions by using metacognitive, or *think aloud*, strategies. They learn to self-question, generate questions, and locate answers to questions.
- *Searching-selecting*—This strategy involves locating in the text or resource the information necessary for answering questions, solving problems, or gathering information.
- *Summarizing*—Students should be asked to recognize the major ideas in a text, connect those ideas to the central theme of the text, eliminate unnecessary text, and retain what is read (Partnership for Reading, 2001).

The twenty instructional strategies in the chapters that follow will provide additional activities needed to help all students successfully comprehend the literary and informational texts so crucial for college and career readiness.

## Language

When I became a classroom teacher over forty years ago, I taught reading as a separate subject. When we put the reading books away, I would teach English. What the brain research tells us is that the brain learns best when the learning is connected to real-life contexts. That is why interdisciplinary instruction is so brain compatible. Students are best taught language skills within the context of literary and informational texts, which are the medium through which those skills are expected to be applied.

For example, I taught a model lesson to a fifth-grade class. The objective was to introduce the concept of keeping a personal journal while

simultaneously reviewing common and proper nouns. To hook students emotionally into the lesson, I introduced them to one of the most important personal journals of all time, *The Diary of Anne Frank*. I explained how Anne's diary reflected personal feelings and deep emotions. I told them that she was hiding above a warehouse for two and a half years, scarcely able to talk or move for fear of being discovered by the German Gestapo and taken to a concentration camp during World War II. As I read excerpts from the diary, students reflected on how they would feel in the same situation. We also discussed words in the diary that should have been capitalized, such as *German* and *World War II*.

To be college and career ready, students must know and use the conventions of Standard English. They must have developed extensive vocabularies and know how to write for a specific purpose. They must know how to connect a word to its synonyms and antonyms and which specific words would be more appropriate to use within the context of a given situation.

## Writing

Whether a person is making a grocery list, answering an e-mail, or completing a composition, communicating in written form is an essential life skill. The Secretary's Commission on Achieving Necessary Skills (SCANS; 1991) report lists writing as one of the basic skills required for success in the real world of work. Brain research has also shown that when a person is writing, particularly in small chunks of information, memory is facilitated. Have you ever written a list of groceries that you would like to buy at the store and then forgot and left the list at home? Isn't it interesting that you could still remember many of the things on the list when you got to the store?

McEwan (2009, p. 155) defines writing as a *toolkit* that enables students to accomplish two major purposes: (1) achieve a number of academic goals, such as writing reports, short stories, and essays and (2) process, comprehend, and retain subject matter. All teachers, regardless of content area, are writing teachers. A student can write the steps to the solution of a math problem, the three causes of the Civil War, or the results observed during a science experiment.

If students are to be ready for college and career, there are three major types of writing with which they should become proficient: argumentative, informational, and narrative. The first, argumentative writing, forces a writer to think critically while evaluating the pros and cons of a topic from many different perspectives. Its purpose can be to change a reader's viewpoint, to call the reader to action, or to ask the reader to accept the writer's viewpoint. Informational writing enables the writer to increase his or her knowledge or comprehension of a particular subject, procedure, or process. Narrative writing is used to persuade, inform, instruct, or entertain. The mnemonic device *PIE* helps us remember the four purposes of narrative writing. Consult Chapter 20: "Writing and Journals" for specific activities in the area of writing.

## Speaking and Listening

Of the four communication skills—reading, writing, listening, and speaking—the two that are most commonly used—listening and speaking—are the two that are often least taught. However, a child's proficiency with oral language is very much a predictor of his or her ability to read and write. Two researchers in the field, Hart and Risley (1995), examined young children in their home and school environments and determined that the total number of words children had been exposed to as preschoolers predicted the number of words they understood—as well as the pace at which they would learn new words—in kindergarten. This effect seemed to be maintained even as those same students entered third grade.

To know that this is true, all I have to do is consider my grandchildren, who are constantly being talked to and listened to and who have an extraordinary number of words in their speaking and listening vocabularies. For example, my four-year-old granddaughter, Aidan, once told me that the show we were watching was *extremely inappropriate* for her. Imagine correctly using the words *extremely inappropriate* at age four. By the way, the show wasn't inappropriate, but I am glad to know that Aidan is selective about her television viewing.

For children in the early grades, receptive vocabulary develops before expressive vocabulary. In other words, children need to understand the words they hear before they are expected to produce those words themselves. In fact, students' listening comprehension outpaces their reading comprehension until grades 6 to 8 (Common Core State Standards, 2010). Therefore, time must be spent building the listening skills of students by reading fiction and informational text selections aloud to them while they are learning to decode. This is especially true for ESL students and those with little exposure to literature at home.

## ■ BRAIN-COMPATIBLE INSTRUCTION

It is an exciting time to be in education! Even though there is so much about the brain that we still do not know, we know more about it today than ever before. For example, we know that every time a person learns something new, he or she grows a new brain cell, called a dendrite. Therefore, teachers are really dendrite growers! It is their job to enable students to grow new brain cells by learning the content that teachers are prepared to teach. By the way, parents are also dendrite growers. In fact they are their child's first and best teachers.

We also know that the left hemisphere of the brain was believed at one time to be characterized as organized, structured, logical, verbal, and mathematical. In other words, qualities valued in school! Look at the SAT and its emphasis on the verbal and mathematical skills of students. Teachers want students who come to class organized and who appear structured. The right hemisphere used to be described as creative, artistic,

musical, intuitive, and global. In other words, qualities valued in life! Consider students who come to school already knowing how to draw or play a musical instrument without any formal instruction. What we know now is that the theory of left and right hemispheres is gone! That ship has sailed! A more updated version of the theory is that teachers must teach to both hemispheres of the brain since they appear to talk to one another over a structure known as the corpus callosum.

In this day and age, when the dropout rates range from 30 to 60 percent annually depending on which school system you are examining, there is one school in the school system I worked for during my thirty-year career that graduates all of its seniors every year. It is not surprising that the school is the DeKalb School of the Performing Arts. You see, these teachers use strategies that address both left and right hemispheres of the brain. They use the artistic to teach the academic and it works! This school has some of the highest test scores and graduation rates of any school in the district.

Learning style theorists (Dewey, 1934; Gardner, 1983; Marzano, 2007; Sternberg & Grigorenko, 2000) and educational consultants (Jensen, 2008; Nevills & Wolfe, 2009; Sousa, 2006, 2011; Willis, 2006, 2007) who research the brain agree that there are some instructional strategies that, by their very nature, take advantage of ways in which brains learn best. They should be used in every classroom, regardless of the content or the grade level because they simply work for all brains—regular education brains, special education brains, gifted brains, ESL brains, attention deficit brains, and autistic brains. These strategies not only enable teachers to address both hemispheres of the brain; they also increase academic achievement for all students, they decrease behavioral problems, and they make teaching and learning so much fun!

These strategies themselves are not new. Most have been used by unforgettable teachers for generations. What is new is that the brain research gives us insight as to why these strategies work better than others, such as long lectures or worksheets.

The twenty strategies are as follows:

1. Brainstorming and discussion
2. Drawing and artwork
3. Field trips
4. Games
5. Graphic organizers, semantic maps, and word webs
6. Humor
7. Manipulatives, experiments, labs, and models
8. Metaphors, analogies, and similes
9. Mnemonic devices

10. Movement
11. Music, rhythm, rhyme, and rap
12. Project-based and problem-based instruction
13. Reciprocal teaching and cooperative learning
14. Role plays, drama, pantomimes, and charades
15. Storytelling
16. Technology
17. Visualization and guided imagery
18. Visuals
19. Work-study and apprenticeships
20. Writing and journals

Refer to Figure 0.1 for a correlation of the twenty brain-compatible strategies to Howard Gardner's theory of multiple intelligences and to the four major modalities: visual, auditory, kinesthetic, and tactile.

## ■ OVERVIEW OF THE BOOK

This language arts book is the second edition of the original text and a part of the multiple-content-area *growing dendrites* series. The additional books in the series are as follows:

- *Worksheets Don't Grow Dendrites: 20 Instructional Strategies That Engage the Brain*, 2nd ed. (2010)
- *Mathematics Worksheets Don't Grow Dendrites: 20 Numeracy Strategies That Engage the Brain, PreK–8* (2009)
- *Science Worksheets Don't Grow Dendrites: 20 Instructional Strategies That Engage the Brain* (2011)
- *Social Studies Worksheets Don't Grow Dendrites: 20 Instructional Strategies That Engage the Brain* (2012)

This book attempts to accomplish the following five major objectives:

1. familiarize the reader with twenty brain-compatible strategies for teaching English language arts curriculum;
2. review updated research regarding the twenty brain-compatible strategies and why they are essential for teaching English language arts to all students;
3. supply more than 200 classroom examples of the application of the twenty strategies for teaching the English language arts curriculum;

4. provide time and space at the end of each chapter for the reader to reflect on the application of these strategies as they apply to the English language arts curriculum; and
5. explain how to plan and execute unforgettable language arts lessons by asking and answering the five questions on the lesson plan format in the Resource section of this book.

While there are many separate books on each of these twenty strategies, teachers would find it difficult to read all of them. That is why I chose to put all twenty strategies in one book. There are twenty chapters, one for each strategy. The chapters do not need to be read sequentially. If you want to read about the impact of storytelling for teaching language arts, then start reading at Chapter 15. Each sample activity is correlated to a major English language arts category, a specific grade level range, and a given standard or objective. The sample activities are just that—samples. They can be used exactly as they are stated or adapted to the age and grade level of students. The advantage of having activities ranging from kindergarten through grade 12 in the same book is that you can easily select activities that will meet the needs of students performing below, on, or above grade level. In this way you can easily differentiate instruction. Once you start thinking, you should be able to generate a smorgasbord of additional activities for each strategy.

If you really think about the list of twenty, these strategies are a natural fit for the primary grades. What we now know is that they work for all students, regardless of age, ability level, grade level, or content area. In fact, when teachers decrease their use of these strategies, there is also a decrease in students' academic achievement, grades, appropriate behavior, confidence, and love of school. The reflection page at the end of each chapter enables you to think about ways in which you are already incorporating the given strategy and what new activities you can choose to include. You may find that you are using more of the strategies than you think at first glance. The lesson planning section asks five questions that help synthesize the process of planning a lesson that makes your content unforgettable!

If you teach the standards and objectives using the twenty brain-compatible strategies outlined in the chapters that follow, not only will your students comprehend and remember the information long after your tests have ended, but their grades will improve, their achievement scores will become higher than you ever dreamed, and you will look forward to teaching every day of your long and illustrious career. After all, *if you love your job, you will never work a day in your life!*

**Figure 0.1** Comparison of Brain-Compatible Instructional Strategies to Learning Theory

<i>Brain-Compatible Strategies</i>	<i>Multiple Intelligences</i>	<i>VAKT</i>
1. Brainstorming and discussion	Verbal-linguistic	Auditory
2. Drawing and artwork	Spatial	Kinesthetic/tactile
3. Field trips	Naturalist	Kinesthetic/tactile
4. Games	Interpersonal	Kinesthetic/tactile
5. Graphic organizers, semantic maps, and word webs	Logical-mathematical/spatial	Visual/tactile
6. Humor	Verbal-linguistic	Auditory
7. Manipulatives, experiments, labs, and models	Logical-mathematical	Tactile
8. Metaphors, analogies, and similes	Spatial	Visual/auditory
9. Mnemonic devices	Musical-rhythmic	Visual/auditory
10. Movement	Bodily-kinesthetic	Kinesthetic
11. Music, rhythm, rhyme, and rap	Musical-rhythmic	Auditory
12. Project-based and problem-based learning	Logical-mathematical	Visual/tactile
13. Reciprocal teaching and cooperative learning	Verbal-linguistic	Auditory
14. Role plays, drama, pantomimes, charades	Bodily-kinesthetic	Kinesthetic
15. Storytelling	Verbal-linguistic	Auditory
16. Technology	Spatial	Visual/tactile
17. Visualization and guided imagery	Spatial	Visual
18. Visuals	Spatial	Visual
19. Work study and apprenticeships	Interpersonal	Kinesthetic
20. Writing and journals	Interpersonal	Visual/tactile