

- Multiple pathways to learning
- 
- Ongoing and frequent assessments
- 
- Respect for all types of learners
- 
- Reducing anxiety
- 
- The use of brain research
- 
- Learning styles/Multiple modalities
- 
- Multiple intelligences
- 
- Varying teaching styles

CHAPTER 1

# Celebrating the Unique Talents of All Learners

I wish I knew what I know now when I first began teaching. I struggled through those first years not understanding many of my students, convinced that if they would only do what I asked, they would succeed and enjoy my class. I engaged in a power struggle with Sammie, who resisted my attempts at having her join the rest of the class in whole-group activities. Then there was Paul, who fidgeted in his chair, drawing classmates' attention to his constant need for movement. There was Andrew, who looked sullen and bored even as I tried desperately to actively engage him in what I thought were exciting lessons. Something was not working. I had planned my lessons and thought about the curriculum for hours over the weekend, considering the content, the objectives, and the outcomes I desired. Still, some of my students remained unengaged. A few were even defiant.

As a new teacher, what I hadn't considered was the diverse learning needs of my students due to their different rates of development and learning and life experiences. I hadn't thought enough about their varied levels of interest due to disparities in their talents and dispositions. And I hadn't paid enough attention to their different learning styles. In other words, I had focused on the content and had not focused enough on the

learner. And so I began my search for information to help me honor the diversity I found among my students.

Over the next several years, I explored many learning theories that informed my teaching and made my instruction more effective for my students. Having abandoned the traditional "one-size-fits-all" teaching methods, I began to incorporate the elements of differentiated instruction into a more effective teaching model—one that reaches all learners.

## The Research Supporting Differentiated Instruction

To understand differentiated instruction, I find it useful to begin with a research framework. What follows is a summary of important educational research that supports differentiated instruction along with insights from my own journey to understanding the kind of instruction students need to succeed. I've included questions at the end of each section to help you evaluate how you may already implement differentiated instruction and identify areas in which you'd like to improve. Chapters 2 through 7 provide strategies and examples of ways to put into practice the theories and ideas below.

### ■ THINKING STYLES

In my own research, I began with an exploration of Anthony Gregorc's theory of thinking styles (1982). His framework for four styles of thinking about the way we view the world (in an abstract or concrete way) and the way we order the world (in a sequential or random order) helped me understand that the students in front of me were as different from each other as

#### ADDRESSING DIFFERENT THINKING STYLES

Figure 1.1

<b>Concrete random thinkers</b>	are creative divergent thinkers, make intuitive leaps, enjoy unstructured problem-solving, like choices, self-motivate, see the big picture not the details.
<b>Concrete sequential thinkers</b>	like order, respond to step-by-step instruction, enjoy learning through concrete materials, attend to details, work with a timeline, and appreciate structure.
<b>Abstract random thinkers</b>	are guided by emotion and interest, seek environments that are active, busy, and unstructured, and like to discuss ideas and interact with others.
<b>Abstract sequential thinkers</b>	enjoy theory and abstract thought, focus on knowledge and facts, thrive on independent investigation and research, and usually prefer to work alone to prove things for themselves.

(Gregorc, 1982)



## TIP

We must first recognize that the way we learned the information we plan to teach is not necessarily the way our students will learn it. The challenge is to stretch beyond our own comfort zones in teaching style and provide choice and options for students who do not learn the same way we do. Gayle Gregory and Carolyn Chapman (2002) use a powerful metaphor of “baiting” the hook with what the fish like, not what the fisherman likes, suggesting that teachers seek teaching and learning strategies that appeal to their students, not necessarily to themselves. Ultimately, the way we teach must extend beyond our own preferences and beyond the way we remember being taught.

they were from me. Figure 1.1 lists some characteristics that describe each of the four thinking styles.

I recognized myself in Gregorc’s description of a learner who likes order, step-by-step instruction, and lots of structure—a concrete sequential thinker. But, I also recognized that many of my students were different. For example, Ryan was pretty much my “thinking” opposite. He was an abstract random thinker, guided by emotion, who enjoyed busy, unstructured time. He favored working with peers and having lots of freedom and interaction. In contrast, Christina preferred to work on her own and enjoyed theory, abstract thought, and independent research: She was an abstract sequential thinker.

As I took the time to recognize these differences, I realized I could no longer teach without addressing them in my lessons. I began to offer choices in the way students could work (alone or with peers). I provided written timelines for long-term assignments while offering the option for a more independent student to present me with his or her own contract or agenda for the project. I made sure that some parts of my lessons accommodated my students who needed a quiet environment to process information and that other parts of my lessons were busy, interactive, and less structured.

How well do your lessons address your students’ different thinking styles? When addressing diverse thinking styles in your classroom, you’ll probably need to make a conscious effort to balance the usual structure and format of your instruction—likely a reflection of your own thinking style—with activities and procedures that will appeal to other “thinkers” in your classroom. Use the checklist below to identify areas in which you might adjust your instruction.

### Things to Consider: Thinking Styles

Have I

- included a balance of structure and freedom to accommodate different thinking styles?
- provided timelines, deadlines, and guidance for students who require structure, while at the same time allowing flexibility for more independent students?
- insisted that students always work in pairs or groups or have I offered them the option of working alone?
- made sure that *sometimes* the learning environment is active, busy, and unstructured?
- made sure that at other times the learning environment is quiet, unhurried, and structured?

## ■ FOUR LEARNING STYLES

Cognitive diversity accounts for differences in the ways people take in information, use that information, and interact with others. Silver and his colleagues identified *four learning styles* based on the work of Carl Jung and Isabel Briggs Meyers (Silver, Hanson, Strong, Schwartz, 1980).

The *Mastery Style* describes learning that focuses on remembering basic facts and details. Students who prefer this style or possess this strength learn best through procedures. They like to perform calculations and computations in math. They enjoy learning through observation, memorizing, practicing, and sequencing. The *Understanding Style* describes learning that develops reasoning skills and an understanding of concepts, patterns, and proofs for ideas. Students who prefer this style learn best conceptually. They use higher-level thinking skills to compare and contrast, analyze and summarize, establish cause and effect, and support or refute ideas. They like to use reason, explain why things happen, suggest rules, and identify patterns. The *Interpersonal Style* describes learning from approaches that emphasize cooperative learning, real-life contexts, and connections to everyday life. Students who prefer this style learn best contextually. They enjoy giving personal responses. Through interaction with others, they take in information, personalize and prioritize it, and then share it with others. The *Self-Expressive Style* describes learning that produces original work using creative application and synthesis of old skills and information. Students who prefer this style are divergent thinkers who learn best through investigation. They like to use information in new ways, visualizing and creating images, solving problems, and generating metaphors for their new understandings.

To help all students experience success in the classroom, the authors recommend the teaching of content through a rotation of all four learning styles (see Figure 1.2).

This “task rotation” can be used while students are engaged in an activity to help them make sense of the information or afterward to help them synthesize and reflect upon what they’ve studied. (See Chapter 2 for ways to differentiate instruction through the three stages of learning: before, during, and after.) Students rotate through tasks that emphasize each of the four styles of learning. This allows them to use their preferred learning style(s) and to strengthen less-preferred styles. Alternatively, you can give students a choice of one or two tasks and then bring the class together to share the different products students have created. Keep in mind that although a student may prefer one style, he or she will attain deeper understanding of topics and concepts when you encourage him or her to use other learning styles—“stretching” the student beyond his or her comfort zone. Figure 1.3 shows a task rotation developed for a unit on nutrition that offers students many activity choices.



## KEY IDEA

Allow students to use their preferred learning style at times in order for them to feel most comfortable in your classroom. At other times, encourage students to stretch beyond their comfort zones and use other styles. This will help them gain deeper understanding and multiple perspectives of the material studied.

Figure 1.2

### MASTERY STYLE

#### Recall

Provide strategies that require students to remember facts or definitions, use sequences, and create categories and/or procedures.

### INTERPERSONAL STYLE

#### Relate personally

Provide strategies that invite students to converse, deepen personal relationships, explore feelings, and express preferences and value judgments.

## Rotate Your Teaching of Content Through Four Learning Styles

### SELF-EXPRESSIVE STYLE

#### Reorganize

Provide strategies that emphasize visualization and imagination, and challenge students to hypothesize, wonder, elaborate, use metaphors, and/or solve problems.

### UNDERSTANDING STYLE

#### Reason

Provide strategies that encourage students to develop critical and analytical thinking by comparing and contrasting, summarizing, establishing cause and effect, proving hunches, and identifying patterns, concepts, and proofs.

(Adapted from Silver et al., 1980; Silver, Strong, & Perini, 2000; Strong, Thomas, Perini, & Silver, 2004)

### Things to Consider: Four Learning Styles

*Have I provided learning opportunities for my students*

- to acquire knowledge and skills through drill, memorization, repetition, practice, and application?
- to acquire knowledge and skills through personal sharing of feelings and judgments, individual and social awareness, and collaborative group work?
- to think, reason, and defend their conclusions through observing and describing data, comparing and contrasting, and identifying patterns and concepts?
- to acquire knowledge and skills through creative and divergent thinking, visualization and imagination, problem-solving, and metaphorical thinking?

Figure 1.3 shows how a group of fifth-grade teachers and I developed a task rotation on the topic of nutrition. We provided several options within each style. (When introducing this strategy, you might want to simplify the process by providing only one task for each learning style.)

Figure 1.3

### Mastery Task

- List the food groups.
- Looking at food labels, order the foods according to fat content, carbohydrate content, and calories.
- Draw the current model of the food pyramid.
- Draw a graph to illustrate the percentages of fat and sugar in your favorite food.
- Given three boxes of cereal, determine the amounts of sugar, fat, and calories in each. Record which has the least/most of each element.

### Interpersonal Task

- Advise a family member about better choices for a healthy lifestyle.
- Survey your peers for healthy menu suggestions for the cafeteria.
- Interview the school nurse about components of a healthy diet or effects of an unhealthy diet.
- Debate for or against vending machines in the school cafeteria.

## Creating a Task Rotation

### NUTRITION UNIT

### Self-Expressive Task

- Create a healthy snack that doesn't exist today.
- Create a month of healthy lunch choices for the cafeteria to serve.
- Write a song to advertise at least four components of a healthy lifestyle.
- Create a healthy menu for a famous historical figure or fictional character.

### Understanding Task

- Describe the effects of an unhealthy diet.
- Describe a healthy meal. Explain your choices.
- Compare and contrast the old and new food pyramids.
- Compare and contrast your lunch and a friend's lunch with regards to the fat, sugar, and calorie content.
- Using a menu from a fast food restaurant, choose a meal for a healthy lunch and one for an unhealthy lunch. Explain your reasoning.

(Developed with Mineola Teachers)

### ■ SENSORY APPROACHES TO LEARNING

In 1987 Rita and Ken Dunn proposed a different model. Their research led them to classify learning styles as auditory, visual, tactile, and kinesthetic. They found that while some children responded best to spoken and other auditory cues (auditory learners), other students learned best with cues provided in written or pictorial form (visual learners). Still others



## TIP

It's important to note that while children do have learning preferences with regards to modalities (styles), research shows that teaching all content in their best modality does not equal greater achievement. The content's best modality is more important for achievement (Willingham, 2005).

For example, if you want students to learn and remember what something looks like, then your presentation should be visual. Orally describing the Roman Coliseum to students is not as effective as showing them a picture or model of it. Likewise, having students read about 1920s Ragtime music would not be as effective as listening to a CD of Scott Joplin playing his famous rags.

## CONTINUED

needed to handle concrete materials like tiles, letters, or computer keyboards (tactile learners) or engage in physical activity or movement (kinesthetic learners).

By creating different activities for each of these different learning styles, I found it easy to address some of the diversity among my students—and reengage them. I made sure to include listening centers and directions on tape for my auditory learners. For my visual learners, I frequently wrote on the board with colored chalk and provided colored pencils for students to mark their notebooks in a variety of ways (boxes around key ideas, circles around causes and effects, lines under important vocabulary terms). We color-coded exemplar compositions by identifying introductions, key ideas, details, transitions, and conclusions, providing an *aha!* moment for those who previously couldn't "see" what logical and coherent writing looked like. My tactile learners benefited from use of all types of manipulatives (including flashcards, tangrams, sentence strips, and sticky notes) and any tools or equipment they could touch and handle. My kinesthetic learners stopped falling out of chairs and fidgeting when I made sure to include task rotations, small-group activities, simulations, and activities at the dry-erase board in my lessons.

Which style best describes your teaching? Take a moment to identify your preferred style and those of the students with whom you experience the greatest challenge—they may have preferred learning styles that are very different from yours and that may not be addressed by your instructional style. Use the chart below to help you identify the learning styles that you may need to address more fully.

### Things to Consider: Sensory Approaches to Learning

Have I planned to accommodate different learning styles with a variety of learning activities such as:

- activities that involve spoken and heard material: discussions, paired readings, conversations, oral reports, recordings, listening centers, think-pair-share, partnerships? (auditory learners)
- activities that include information that can be seen or read: graphic organizers, summaries, use of color and highlighters, note-taking, pictures, diagrams, illustrations, photos, video? (visual learners)
- activities that allow students to handle and manipulate materials: making displays, writing, drawing, using manipulatives, equipment, tools? (tactile learners)
- activities that allow students to do and move and become physically involved: construction activities, simulations, role plays? (kinesthetic learners)

(Based on the work of Dunn & Dunn, 1987)

## ■ MULTIPLE INTELLIGENCES

By the early 1990s psychologist Howard Gardner's research on multiple intelligences had reached our educational circles. His theory helped us realize that anything important enough to learn could and probably should be taught in more than one way. In addition to the ways we had traditionally thought of student intelligence (as strengths in either verbal-linguistic or logical-mathematical areas—the areas "tested" in school), Gardner introduced us to other intelligences. This broadened our concept of how we and our students are "smart."

Gardner identified an *interpersonal intelligence*, characterized by the ability to communicate well, to be a leader, to feel empathy, and to enjoy working with others. He also showed us that some people have a *musical intelligence*, which enables them to learn to play an instrument or sing, be sensitive to noise and sounds, recognize patterns (as in poetry), or have a developed sense of rhythm. Further, he designated an *intrapersonal intelligence*, through which an individual knows him- or herself well, sets personal goals, and enjoys being alone and engaging in personal hobbies. Gardner identified a *spatial intelligence* in individuals who possess a strong inclination to represent ideas graphically, create mental images, notice visual details, and draw and sketch. He also named a *bodily-kinesthetic intelligence*, through which an individual has a propensity for movement, excelling in activities requiring strength, agility, speed, or eye-hand coordination. In addition, he identified a *naturalist intelligence*, denoted by an individual's ability to find patterns in nature, concern for plants and animals as well as ecological issues, and strong desire to work in natural settings.

Coming on the heels of Gregorc's thinking-styles research and bolstered by the learning styles models of Silver et al. and Dunn & Dunn, multiple intelligences theory seriously challenged the notion that all students receive an equal opportunity to learn in a traditional, teacher-centered classroom with largely auditory instruction and pencil-and-paper exercises. My colleagues and I began to understand that *variety* is the key to reaching all students. We needed to introduce information using strategies that appealed to all these intelligences and then provide multiple ways for students to internalize the information. Finally, we needed to create assorted opportunities for students to demonstrate their knowledge. A multiple-intelligences movement in education was born that strengthened the call for varied teaching strategies and multiple assessments, a call for *differentiation* in our classrooms.

In response, I began to integrate multiple intelligence-based activities in class work and homework. Instead of one research paper assignment, I provided students with a choice of several project options and I worked to create different types of assessments that helped students show what they'd learned in ways that allowed them to capitalize on their intelligences,

## TIP CONTINUED

So does this new cognitive research mean you shouldn't bother teaching to a child's preferred learning style? I would argue that teaching to a child's strength makes him or her feel comfortable in the classroom and this translates into greater motivation on the part of that student. Without motivation, students achieve little. So, by doing both, paying attention to the content's best modality and, at times, addressing the student's preferred learning style, you can set the stage for even greater achievement.



## KEY IDEA

**Variety** is a key to reaching all students.

such as student-written plays or model-building. Toward the end of a lesson, I would give students the option of summarizing their learning by making a sketch (for visual learners), by designing a graphic organizer (for logical-mathematical learners), or by discussing with a partner the key ideas and preparing and presenting to the class a summary using an overhead transparency (for interpersonal learners). Occasionally, a few students would opt to create a song or rap that synthesized the key concepts of the topic (musical learners).

The questions below can help you assess your instructional preferences and plan for instruction with multiple intelligence-based activities throughout the stages of learning. (See Chapter 5 for strategies to differentiate instruction guided by multiple intelligences theory and Chapter 2 for ways to differentiate instruction through all stages of learning.)

### Things to Consider: Multiple Intelligences

*Have I integrated multiple intelligence-based activities in my lessons to help students acquire content (before learning), process information (during learning), and demonstrate understanding (after learning)?*

- **Before learning:** Have I engaged several intelligences while presenting information to the class? For example, have I
  - provided materials for discovery and manipulation? (*bodily-kinesthetic*)
  - presented an oral story with new information in context? (*auditory*)
  - introduced terms in a graphic organizer on the blackboard? (*logical-mathematical*)
- **During learning:** Have I encouraged students to use several intelligences to make sense of the information? For example, have I provided opportunities for students to
  - complete a freewrite on the topic? (*verbal-linguistic*)
  - turn to a partner and discuss? (*interpersonal*)
  - draw a diagram to make the information memorable? (*spatial*)
- **After learning:** Have I allowed students to choose from among numerous multiple intelligence-based activities to demonstrate knowledge and understanding of the topic? For example, have I provided opportunities for students to
  - write journal entries from a particular point of view? (*intrapersonal*)
  - role-play a pivotal scene or possible scenario? (*bodily-kinesthetic*)
  - write a children's book about the topic? (*verbal-linguistic*)

### ■ UNIQUE MINDS AND LEARNING DIFFERENCES

In 1995 cognitive researcher Robert Sylwester suggested that learners have “designer brains” (1995). The unique circuitry in each of our brains is the reason why we each have distinct preferences about where, when, and how we learn. Dramatic advances in brain research have provided strong support for a differentiated approach to teaching and learning. Considering the significant findings about how the brain learns, it is now no surprise that a one-size-fits-all approach does not work in most classrooms. When our instruction accommodates the way a learner prefers to work, the results are often different from those we find when we impose a certain learning environment or activity.

Many students will act out if they are in an environment that is extremely uncomfortable for them. Others will become extraordinarily passive. We all have seen fidgety students who are required to sit and work at their desks for the duration of the school day. We have seen students with glazed eyes trying to sustain attention during a 30-minute lecture. Research about how the brain learns suggests that if we provide some type of movement for the first group of students (getting up to write on the board, turning to talk and summarize with partners) and an additional mode of instruction for the second group of students (vivid posters, interesting videos, appropriate artifacts), we can expect students to be more engaged.

Dr. Mel Levine, professor of pediatrics at the University of North Carolina's medical school and cofounder of All Kinds of Minds, a nonprofit institute for the study of differences in learning, offers hope to all kinds of learners. In his groundbreaking framework for student success, Levine identified eight neurodevelopmental systems of the mind (attention, memory, language, spatial ordering, sequential ordering, motor, higher thinking, social thinking) in which specific breakdowns in learning manifest themselves in observable behavior. Rather than labeling a student, he suggests that we label the behavior, address the weaknesses, and, in particular, help students build on their strengths.

Levine believes that teachers should analyze the tasks they give to students in order to identify the specific neurodevelopmental functions required of each task. This process of task analysis helps teachers to diagnose the activity instead of the student. Once the problem the student is having with the task has been identified, Levine suggests explaining the problem to the student and then providing him or her with strategies for handling it. Levine's research has shown that students achieve success when they are allowed to learn through their individual strengths, with accommodations and interventions as a secondary focus. Forcing children to do things that their minds aren't wired for can short-circuit their success. We have seen the results of such efforts in our classrooms.



It's taken for granted in adult society that we cannot all be “generalists” skilled in every area of learning and mastery. Nevertheless, we apply tremendous pressure to our children to be good at **everything**. They are expected to shine in math, reading, writing, speaking, spelling, memorization, comprehension, problem solving. . . and none of us adults can do all this.

MEL LEVINE

Below is a list of questions to ask yourself as you analyze your learning tasks to determine which of the eight neurodevelopmental systems are involved and how you can plan for student success.

### Things to Consider: Neurodevelopment and Learning

Have I

- analyzed the task to determine all of the steps and processes it requires students to use?
- considered whether this task involves attention, memory, language, spatial ordering, sequential ordering, motor skills, higher-order thinking, social skills, or a combination of these?
- reflected upon what might cause certain students to have difficulty with a particular task?
- thought of strategies to help those students who need additional assistance and support?
- considered allowing my students to work on this task using a preferred mode of learning or strength, such as writing about it, talking about it, or drawing an image to make sense of the concept?



#### online connection

To read articles by Sylwester and others about neuroscience, brain research, and the implications for education, visit the "News From the Neurosciences" page of the following Web site:

[http://www.newhorizons.org/neuro/front\\_neuro.html](http://www.newhorizons.org/neuro/front_neuro.html)

To learn more about Dr. Mel Levine's approach to understanding and managing differences in learning, visit the following Web site:

<http://www.allkindsofminds.org>

#### ■ GENDER-BASED PREFERENCES

In addition to learning-style preferences, intelligence preferences, and brain-based differences that exist in the classroom, we also witness gender-based learning preferences on a regular basis. Mark can't sit as still as Shelley, so he rocks in his chair until he periodically falls over. Shelley is a great listener and more comfortable than Mark with a complex flow of conversation. Janine finds math easier to understand when her teacher provides manipulatives for her to use. Damien can calculate numbers more quickly and follow the abstract math lesson taught on the blackboard more easily than Janine.

To understand the *reasons* for the differences in male and female behavior in school, we can turn to the evolutionary biologists. They explain that the brain accommodated to the roles that females and males played for millions of years. Males were responsible for hunting (a spatial occupation) and protection and war (aggressive occupations). Females were responsible for gathering roots and vegetation and most child care (sensory and verbal occupations). Females had to utilize their verbal skills more effectively than males; males had to have finely tuned spatial skills and be more physically aggressive (Gurian, 2001).

In our classrooms today, we often see girls who have better verbal abilities than their male peers and who rely heavily on verbal communication. Frequently, we see boys with better spatial abilities such as measuring, mechanical design, and geography and map reading. Chemicals in the brain tend to make boys more impulsive, as well as fidgety. Girls generally tend not to need movement as much as boys while learning (Gurian, 2001).

To further understand these differences we must look at our social and cultural environments over the past few decades. Until recently, girls were not encouraged to take high-level math and science courses. Therefore, they had little opportunity to excel in those areas. Boys have been encouraged to play sports and with toys like Legos, and this exposure and practice has increased their spatial abilities. The fact that girls tended to have stronger verbal abilities while boys tended to have stronger spatial abilities was generally accepted. Recently, however, educational opportunities have increased for women. Evolutionary neurobiologist Richard C. Francis reports that "the sex differences on standardized math tests has diminished over the past 40 years" (2003). It seems that opportunity and experience can influence success with either gender.



#### RELATED LITERATURE

To learn more about gender-based differences, see Michael Gurian's *Boys and Girls Learn Differently: A Guide for Teachers and Parents* (San Francisco: Jossey-Bass, 2001).

Though it's useful to understand differences in brain-based gender preferences, we must be careful not to stereotype students. Great variation exists and there are *many exceptions* to the rules. We should, however, use this new knowledge to add wisdom to our classroom planning and make sure to provide students with choices and flexibility to make their work more productive. The differences between the male and female brain herald a call for differentiation of instruction. The differences point not to a difference in capability, but to the need for different types of learning, different pathways to the same outcome, a differentiated classroom.



If we are to achieve a richer culture, rich in contrasting values, we must recognize the whole gamut of human potentialities and so weave a less arbitrary social fabric, one in which each diverse human gift will find a future place.

MARGARET MEAD

Gurian suggests that teachers engage in action-research at the classroom level, and plan same-gender groups for one or more cooperative activities or assignments. He cites examples of teachers from around the country who have used seating charts to separate girls and boys in the middle grades, and who have seen results: With less competition between boys and girls and fewer gender-related psycho-social stressors, gender-grouped classes report greater student achievement and satisfaction in the activity.

I've developed a set of questions that helps me focus on the different physical, social, and academic needs of boys and girls in the classroom. You may want to refer to these questions, listed in the checklist below, to check whether your instructional plans include both learning orientations.

### Things to Consider: Gender-based Preferences

Have I

- planned for boy-only/girl-only groups when useful?
- offered a balance of sedentary (computer, study, reading) activities with active (group, task-rotation, drama-based) activities in my lessons?
- provided lots of storytelling and time to explore mythology to help the male brain develop its imaginative and verbal skills through story making?
- taught higher levels of math not just on the blackboard, which requires abstraction, but also through graphs, charts, written material on paper, and manipulatives, which make abstract ideas more tangible?
- included a balance of competitive activities and cooperative activities with groups and pairs?

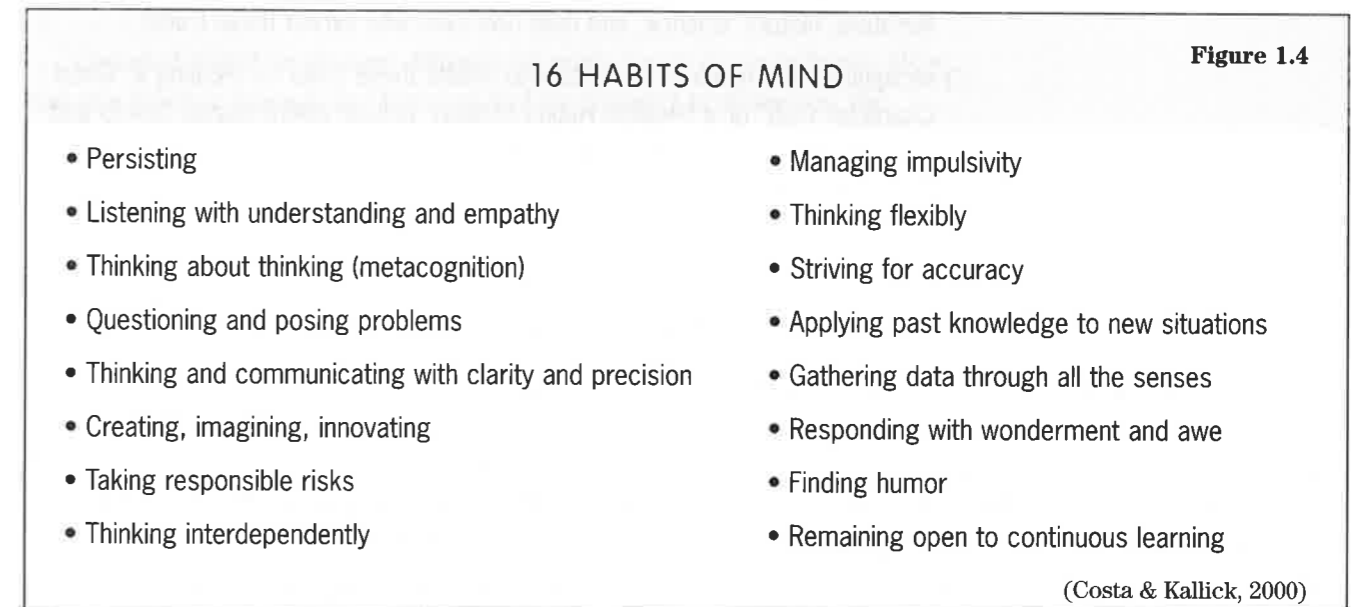
(Based on suggestions from Gurian, 2001)

### EMOTIONAL INTELLIGENCE

A careful look at our learners reminds us that there are still other ways in which they differ. Each student comes to us with his or her own level of emotional intelligence. Redefining, once again, what it means to be smart, Daniel Goleman, author of the pioneering book on this topic, focuses on a key set of characteristics, including the ability to motivate ourselves and persist in the face of frustrations; to control impulse and delay gratification, to regulate our moods and keep distress from swamping our ability to think, and to empathize and hope (1995). Teaching students to handle anger and resolve conflicts positively, feel empathy, control impulses, and work cooperatively with others increases the likelihood of learner success. By addressing the social and emotional needs of students, teachers can provide safe, respectful, inviting, and engaging environments. It is in these

classrooms that students' intellectual lives can flourish because their brains can focus on the cognitive task at hand, rather than on some perceived social or emotional threat.

Arthur Costa and Bena Kallick describe a "character-centered" view of intelligence, one that honors temperament and differences. They list and describe 16 habits that help productive human beings work toward thoughtful, intelligent action when faced with uncertain or challenging situations (2000). Figure 1.4 lists these habits.



Like Goleman, Costa and Kallick point out that the connection between emotions and intelligence plays a strong role in motivating student behavior. How many of us can point to students whom we have taught strategies and skills only to be frustrated when we realize they are not using the techniques we know they have at their fingertips? When we encourage students to use "habits of mind," we promote the likelihood that they will *choose* to use a strategy or skill that they have been taught. Our classrooms become personal learning laboratories where students discover how they can control their own success by employing certain habits. In one school I work with, three grade levels made habits of mind the focus of character education. Encouraging differentiation, I helped those teachers to develop activities that promoted different learning styles, appealed to multiple intelligences, and employed choice and flexible groupings as they explored these habits with their students. Our project is detailed on page 24.

Consider the habits of mind that you and your students exhibit as you interact and work during the day. You may want to choose one of the habits of mind with which students need support and focus on that habit for a month or focus on several habits over the course of a year.

## Things to Consider: Habits of Mind

Have I

- made addressing the social and emotional needs of my students a top priority?
- identified specific "habits" to work on with my class or particular students?
- helped students to set goals in developing these habits?
- provided opportunities for students to write, talk, and draw about people in literature, history, science, and their own lives who exhibit these traits?
- recognized and honored students who exhibit these traits by creating a "Good Character Club" or a "Healthy Habits of Mind" bulletin board display (photo and description of the habit in action) and encouraged students to recommend their peers for recognition?

### A SCHOOL EMBRACES "HABITS OF MIND"

When I helped teachers in Kings Park, New York, implement a "habits of mind" program in their classrooms, we decided to involve teachers, counselors, and administrators in a conversation around developing the new habits. Together, we prioritized and narrowed the list of 16 habits to make it manageable. We decided to focus on the following five habits for the year: persisting, managing impulsivity, listening with understanding and empathy, striving for accuracy, and applying past knowledge to new situations. We shared the list with students and discussed the importance of developing these habits for success in school and beyond.

Agreeing to focus on one habit each month, teachers and counselors provided multiple opportunities for students to talk about, describe, and practice each habit. Here are some of the activities they developed:

- **Classroom discussions:** Using synonyms and descriptions of the "habit in action," students focus on whether characters in literature and movies and people in science, history, and their lives use the habits of mind to succeed. Students are invited to bring in examples of the habit in action from newspaper stories, biographies they've read, or their own journal entries.

- **Bulletin boards:** Students display examples from the lives of remarkable and virtuous people. They may write biographical sketches or create a graphic organizer that highlights the habits of mind that led to the success of their subject.
- **Role play:** Students write skits and role-play the habits of mind in action.
- **Circle-group work:** Students work in a large circle group. The teacher gives them a task, such as orally participating in a Socratic Seminar (see Chapter 6), in order to practice three habits of mind: listening with understanding and empathy, communicating with clarity and precision, and thinking flexibly by looking at alternate points of view.
- **Small-group work:** Students work in small, cooperative groups to complete research or other learning activities with a focus on engaging a particular habit of mind.
- **Character Club:** Students meet in an after-recess club, where they have an opportunity to share incidents in which they or their peers have chosen to use their new habits. Students may receive good character awards to post on a special bulletin board.



### RELATED LITERATURE

To learn more about "habits of mind," read Arthur Costa and Bena Kallick's *Discovering and Exploring Habits of Mind*. (Alexandria, Virginia: ASCD, 2000).

Grouped together, student differences might seem overwhelming. How can one teacher manage the learning and intelligence preferences, the thinking styles, the brain-based and gender-based differences, the learning patterns, and the social and emotional needs of an entire class of students?

Most teachers instinctively know there are differences among their students, and they intuitively apply different approaches at a moment's notice. In a differentiated classroom, however, teachers are engaged in the thoughtful and purposeful planning for the range of learners in their classes. Recognizing that they can't fully meet everyone's needs each day, they plan to provide different environments, different learning activities, and different assessments throughout the course of the school year.

Understanding the principles of diversity that we have discussed so far can better prepare you to help students succeed. The rest of this book provides you with a range of concrete strategies for teaching with differentiation in mind. Begin the process of increasing differentiation in your classroom by considering the ways you may already structure your teaching and classroom environment to accommodate student diversity. Use the checklist below to discover areas in which you would like to grow.

## Things to Consider

How can I honor the diversity in my classroom? Do I

- frequently assess** the strengths, talents, and interests of my learners through reflective journals, QuickWrites (see Chapter 2), and interest surveys to find out what really motivates them?
- vary my classroom environment** enough so there is a balance of structure and freedom, busyness and quiet, group work and independence?
- rotate the teaching of content** through different learning styles so my students can learn in their preferred style, as well as enlarge their repertoire of skills in their less-preferred styles?

- **provide enough multiple intelligence-based “choice” opportunities** so my students can choose to learn and show-what-they-know in the ways they prefer?
- **recognize gender-based differences** in my students and plan a variety of learning opportunities and environments to accommodate those differences?
- **build the culture of my classroom to reflect a character-centered view of intelligence** in which students are encouraged to persist, resolve conflicts positively, and choose thoughtful, intelligent actions when faced with new situations?
- **stretch beyond my own teaching style comfort zone** and teach beyond the way I remember being taught?

## CHAPTER 2

# Differentiating Instruction During the Three Phases of Learning

As teachers we are sometimes so eager to begin a new unit of study that we dive into the topic without keeping in mind how the brain responds before, during, or after a learning experience. We might ask students, for example, to read ahead for a few pages in the new textbook chapter without remembering that activating prior knowledge *first* is critical to setting a purpose for reading and increasing comprehension. We might feel pressed for time during the unit, and in an effort to cover as much material as we can, we might skip providing time for students to find relevance and construct meaning through elaborative rehearsal with learning partners or cooperative groups, or checking for understanding. Or, when we have covered a topic, we might feel the need to move rapidly on to the next topic in an effort to complete the curriculum. What is lost in this headlong rush is a great deal of understanding, relevancy, and retention.

This chapter presents the research that supports certain types of activities at three different points in the learning process. It also provides examples of specific strategies that you can use to maximize learning at each stage along the way.

### PRINCIPLES OF EFFECTIVE INSTRUCTION EXPLORED IN THIS CHAPTER:

- Multiple pathways to learning
- Ongoing and frequent assessments
- Respect for all types of learners
- The use of brain research
- Learning styles/Multiple modalities
- Multiple Intelligences
- Self-directed learning