Lesson 3

Learning Style and Processing Preferences

Chapter 2

Key Terms

auditory
kinesthetic
mobility
mode
motivation
perception
persistence
reflex
schema
sensory
sociological
tactile

What You Will Learn to Do

- Explain how learning styles and preferences can impact learning

Linked Core Abilities

- Build your capacity for lifelong learning
- Apply critical thinking techniques

Skills and Knowledge You Will Gain Along the Way

- Assess the uniqueness of individual learning styles and preferences
- Distinguish among the three sensory (perceptual) systems
- Explain the essential elements of the learning process
- Contrast an automatic and purposeful response to stimuli
- Explain the five phases of learning in the Dunn and Dunn learning model
- Explore how to expand beyond your current preferences
- Define the key words contained in this lesson

Introduction

People learn in different ways. Learning is a complex, interrelated system of accessing information, getting it into the brain, and processing that information to solve problems or support activities.

This lesson covers different learning styles and preferences. You learn about the three sensory systems and how to tell the different between them. You also explore your own individual learning style and preference, and discover how to expand beyond it.

Learning Styles

Learning styles describe the various ways people gather as well as process information. Each of us has a propensity for looking, listening, or touching: some read the instructions for Monopoly, others ask to hear the rules explained, still others get the dice rolling and learn as they play. Furthermore, we each have our most productive time of day, favorite chairs to sit in, and other environmental factors that help us concentrate or feel energized.

Understanding learning styles leads to success. After you know what learning environment works best for you and what your preferred learning style is, you will see how you can use your preferred learning style to move information through the learning process and thereby:

- **Learn new information more quickly and efficiently.**
- **Remember new information for a longer period of time.**
- **Increase your ability to recall the information more quickly and completely for performance, discussion, or test taking.**

The Learning Process

When you learn something, you are acquiring a skill, knowledge or attitude. The process of learning, shown in Figure 2.3.1, involves the ability to take in data, process it, store it, and retrieve it at a later time.

Your five senses (hearing, seeing, touching, tasting, and smelling) take in stimuli from the environment. The stimuli are subconsciously filtered, causing you to focus on some stimuli and ignore others. Those selected stimuli are sent to the brain (organism) for processing, where they are linked to prior knowledge, evaluated against your beliefs, and stored in memory. The stimuli, if encountered again, will then elicit a learned response.

If you touch a hot iron for the first time, the burning sensation is sent to your brain. The brain processes it as pain. This causes the **reflex** response of removing your hand quickly. The learned response, however, would be to not touch the iron again.

Key Note Term

reflex – denoting or of an involuntary action in which the motor nerves act in response to a stimulus from an impression made on the sensory nerves

Figure 2.3.1: The learning process.
Courtesy of CACI and the U.S. Army.

Preferred Learning Environment

Can you identify personal experiences that illustrate your preferences for a good learning environment? Can you recall times when learning frustrated you? If you examined each of those times, you would probably see that you were working outside of a preferred environment. The following are aspects of the environment that have an impact on the learning process:

- **Sound. Some people need it absolutely quiet in order to concentrate. Others work or study more effectively only if there is music or noise around them.**
- **Light. Too little or too much light can either inhibit or encourage learning. Many adolescents usually prefer soft or dim lights to study.**
- **Design. Refers to the formal or informal settings and furniture in the room where you study. For instance, do you use a desk or do you prefer the floor, bed, or just the chair?**
- **Time of day. Some people are night people and others are early morning workers.**
- **Food intake. Your need to eat, drink, or chew gum while studying or working.**
- **Social aspects. Preference to work or study alone, with a partner, or in a group.**

Perceptual Modalities

Clearly our ability to learn is dependent on our ability to take in, filter, select, process, and then apply new information.

We take in new information through our five senses: hearing, seeing, touching, tasting, and smelling. For most humans, three of the senses dominate our **perceptions**. Perceive means "to become aware of through the senses," and **mode** simply means the method, route, or way. Thus, perceptual modality is another term used to describe the different **sensory** channels.

Humans tend to rely on seeing, hearing, and touching as the primary methods for taking in stimuli from our environment. Of course, a physical limitation might exist that limits one of the senses and the person might have to adapt. In other mammals, dogs, for example, smelling and tasting are highly developed.

Key Note Terms

perception – awareness of one's environment through physical sensation; ability to understand

mode – method, route, or way

sensory – of or relating to an awareness or a mental process due to a stimulation of a sense organ

Key Note Terms

auditory – of or pertaining to hearing

kinesthetic – a sensory experience derived from a sense that perceives bodily movement

tactile – of or relating to, or perceptible through, the sense of touch

Learning styles are often categorized according to a person's strongest sensory system; thus we have **auditory**, **kinesthetic/tactile,** and visual learners.

The following sections explore several learning models that consider how preferences affect the learning process.

The Big Three—Auditory, Kinesthetic, and Visual

How do you gather information? What is your strongest sensory system?

Auditory learners are the listeners. This 30 percent of the population may need to repeat instructions, even silently, to mentally "hear" information as they commit it to memory. They learn well by discussing ideas and asking questions. They like cooperative learning and group projects.

Kinesthetic/tactile learners gather meaning through touch and movement. All young children depend heavily on this strength, which is why it's so hard to walk through an art gallery with a small child who wants to "see" by touching. About 5 percent of the population holds onto this style throughout their adult lives, continuing to learn best through physical interaction.

About 65 percent of us are visual learners who gather information best by looking, reading, and watching. Visual learners may tune out spoken directions and favor illustrated explanations or charts. They "see" ideas in the mind's eye, remembering visual details from places they've visited.

Adaptive Systems

With increased use, our sensory systems—and their associated neural networks in the brain—become more sensitive and are able to process data more efficiently. In turn, people are able to come up with more skilled responses. For example, not only do concert pianists have more finely tuned abilities to hear sound than the average person, but their fine motor skills, and the sensitivity of their very fingertips, are increased through the growth of neuronal connections. Thus the adage *Practice makes perfect* actually has a physical reason for being true.

The brain can also adapt to meet specialized needs when there is a physical disability or injury. For instance, a nonhearing person handles sophisticated language tasks, like storytelling, with no auditory stimulus and limited ability to speak aloud. Most of us create language by making words come out of our mouth. However, a nonhearing person is likely to tell a story by using sign language.

Although some people think that each of us is born with given strengths, others believe that we develop strengths through our experiences and skill-building activities. The bottom line is that people have strengths. Being aware of your strengths allows you to leverage those strengths to achieve your goals and increases your ability to make an informed choice to develop in key areas.

Metacognition

You have the ability to bring your perceptions and processing into conscious consideration. We call this process thinking about thinking or metacognition. It is the simple process of becoming more aware.

In the learning process, metacognition can be a valuable tool for self-development. Paying attention—becoming more aware of your perceptions and thoughts and more deliberate in your choice of responses—is all part of developing as a person.

Attention and Motivation

An important component of our learning is the process of directing our attention. This brings us squarely into the question of **motivation**. What do we focus on and why?

Key Note Term

motivation – something that causes a person to act

Your motivation or personal interest is an important component of what you consciously choose to focus on. You may ask yourself the following questions:

- **What is the payoff or reward?**
- **Are you learning for pleasure or for the avoidance of pain?**
- **Are you grades oriented or learning oriented?**
- **Are you learning to please yourself or someone other than yourself (parent, friend, teacher, officer)?**

Data Selection and Attention

You have the ability to direct your attention and decide what to focus on. For the sake of efficiency, however, these decisions are often made subconsciously. Lots of data come in all the time, and we can't and don't pay attention to all of it. A lot of these data, depending on your goals, are potentially unimportant and therefore distracting. A "go or no go" signal occurs to regulate the transmission of stimuli. Thus, the sounds of the air conditioner or refrigerator, visual field activity, traffic noise, and so on are simply ignored in terms of conscious thought.

This physical fact reflects an important reality in the learning process. Given the billions of sensory messages taken in and processed constantly, a key activity stands out as extremely important, namely, the ability to filter and select what data to focus on.

When some stimuli are present over a period of time, we adapt to them. Continuing stimuli of constant intensity will stop activating the receptors; in other words, we "tune out." Think about what this means about how you learn.

If your teacher's voice drones on and on, with the same pitch, the same tone, and the same type of words, your brain tends to switch off and filter that sensory input. The same thing occurs if you keep trying to solve a problem in the same way. The magic of active learning happens when you use a variety of stimuli. Even small changes can make a big difference in activating different regions of the brain.

Moving from a short lecture, to building something, to reading quietly, to talking over ideas with another student—this changes the manner in which information is taken in and processed. A mixture of activities will stimulate the brain with different types of impulses, to keep those receptors firing. Learning becomes even more activated when there are spaces in the constant data flow for quiet reflection.

Mental Filters

Not only are the data being absorbed, but they are also being evaluated against prior knowledge and then interpreted. After you have gathered your selected stimuli, you group them into a cluster that you can label, so that the label makes sense to you. This helps you to know, almost without thinking about it, whether it's safe to reach out and touch the hot iron.

You have a stored set of beliefs in your memory called a **schema**. The schema is an outline of the way things are—your own representation of reality. These beliefs cause you to monitor and select the stimuli you take in and to which you pay attention. These internal models limit the data you are curious about and explore.

Key Note Term

schema – a pattern imposed on complex reality or experience to assist in explaining it, mediate perception, or guide response

Ladder of Inference

In *The Fifth Discipline Field Book*, Peter Senge describes a type of schema called the Ladder of Inference, shown in Figure 2.3.2. In this model, we begin with real data or experience (stimuli), and from that data we select the data to which we pay attention. Then we attach meaning to this selected data, make assumptions, and draw conclusions. From our conclusions, we adopt beliefs about the world, which then cause us to take actions and help determine the data we will select the next time. This mental pathway can be a slippery slope that will often lead to misguided beliefs.

Note

Peter Senge is founding chair of the Society for Organizational Learning (SoL). His current areas of special interest focus on decentralizing the role of leadership in organizations so as to enhance the capacity of all people to work productively toward common goals.

For example, if you believe that a particular person doesn't like you, you tend to only see and hear those actions or statements that support your belief. This is another way you filter information.

Processing Strengths

In addition to the preferred input modality, there are clear differences in processing preferences. This tends to break down in alignment with the right-brain and left-brain specializations discussed in an earlier lesson. For example, activities involving numbers, logic, word puzzles, sequential tasks, or analysis are normally more active on the left side of the brain, whereas activities involving music, imagination, colors, or creative expressions are normally more active on the right side. As you grow, you continue to develop a brain preference; that is, you will prefer activity on one side of the brain over the other.

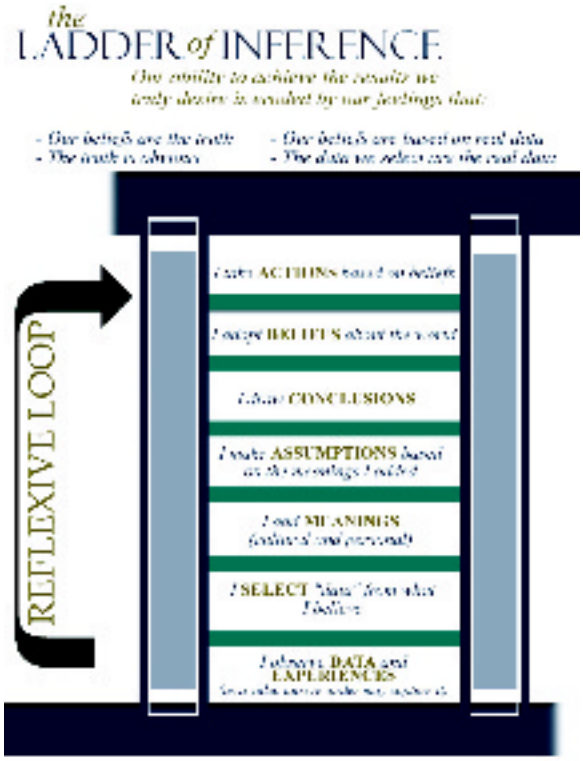

Figure 2.3.2: Peter Senge's Ladder of Inference.
Courtesy of CACI and the U.S. Army.

Figure 2.3.3 shows that during the memory phase of the learning process, learning occurs in both hemispheres. That is, both sides have the ability to perceive information, new ideas, and so on and then organize that information so you can later recall and use it.

Thus we have global and analytic learners in accordance with the brain's ability to focus the abilities of the left hemisphere on details and of the right hemisphere on the big picture.

In other words, besides visual, auditory, or kinesthetic intake strengths, people lean toward one of two styles for processing information: analytic (those individuals who see the individual elements most clearly) and global (those individuals who focus on the big picture).

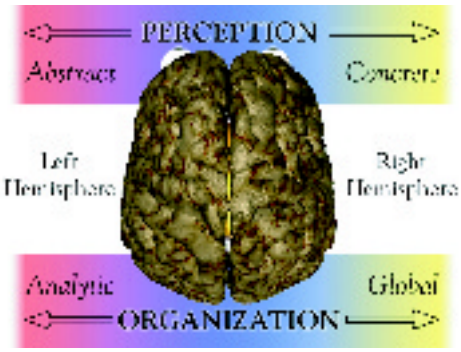

Figure 2.3.3: Learning occurs in both brain hemispheres during the memory phase.
Courtesy of CACI and the U.S. Army.

Analytic Learners

Analytic learners examine information by breaking it down bit-by-bit and arranging it logically. One person's tidy suitcase displays a bent for order and sequence, as does a penchant for lists and punctuality.

An analytic learner is happiest when his or her life marches forward predictably, when he or she can follow a plan and know the rules. Analytic learners are able to see the trees through the forest, which helps keep them (and those around them) rooted and productive.

Global Learners

Global learners, on the other hand, may miss a few trees, but they can surely see the forest. They organize by clustering information into groups. Their focus is drawn to the larger ideas underpinning the details; they concern themselves with the purpose behind the specifics.

Global learners can appear disorganized because of their impatience with minutiae and their willingness to jump between ideas in random ways. They'll bend the rules, including schedules and deadlines, to fit what they see as a greater purpose.

We are all capable of absorbing data through any of our senses and of processing new information in many different ways. This is a tribute to the brain's amazing adaptability and resourcefulness. Nonetheless, knowledge of our strengths and learning preferences helps us to understand our own processes, enabling us to make choices that will empower us as lifelong learners.

Learning Models

Think about your favorite class. Does the teacher lecture? Do you do experiments or go on field trips? Does the teacher show video clips or movies? Do you work in groups? Do you use role-play to act out different scenarios? Chances are, your teacher is using learning activities that match your learning style and processing preferences.

Everyone can learn, but not everyone learns in the same way. Where learning is concerned, there is no one approach that fits all people. If instruction is designed and implemented with consideration of different styles of learning, learners are able to increase concentration as well as process and retain more difficult material.

Models of Learning

Models help make sense of our world. They provide a framework or structure to help us understand a large or complex concept and break it down into discrete, manageable units.

Learning models provide teachers with an organized system for creating an appropriate learning environment and planning instructional activities. Learning models affect what the teacher does, what the student does, the organization of the classroom, the nature of the procedures, the types of materials, and the instructional tasks.

In this section, you examine two distinct, but complementary, learning models: the *Dunn and Dunn learning styles model,* and *Kolb's model of experiential learning.* Each of these models is based on your individual learning styles and processing preferences. The use of the learning styles model requires teachers to reorganize the instructional environment and instructional activities in order to move from methods that were primarily dominated by lectures to classrooms that facilitate several simultaneous approaches to learning. Both of these models have years of research support behind them as well as validation through practical classroom applications.

Nine Facets of Brain-Compatible Learning

The learning process is all about how we take in, filter, store, and organize information in our brain. This research on how the brain perceives and processes information leads us to a greater understanding of how we learn and how it forms the underlying principles on which learning models were built.

The nine facets of brain-compatible learning, adapted from *Brain: Compatible Learning for the Block,* (Williams & Dunn, Skylight Professional Development, 1999) are as follows:

- ***Learning becomes relevant through personal context.*** **Students need to understand how this new information relates to their "own life."**
- ***Learning is dependent on motivation.*** **Students need to be motivated in order to commit the new information to memory.**
- ***Learning is reinforced through hands-on experience.*** **This experience enables the student to put a concept or theory in context and examine the parts that make up the whole.**
- ***Learning requires linking new information to prior knowledge.*** **The brain has a much greater capacity to take in and store new information that it can relate to something already learned. Teachers need to help students make these connections.**
- ***Learning is achieved more efficiently when information is chunked.*** **By grouping together related information, the brain forms a schema, or concept, and assigns meaning.**
- ***Learning is enhanced with time for reflection.*** **Reflection, or thinking about what was just learned, helps put the new information in long-term memory. Activities such as group discussions, questioning, and writing in a journal all aid in this process.**
- ***Learning is retained longer when associated with senses and emotions.*** **The more senses that are involved in the learning experience, the more stimuli have a chance of reaching long-term memory.**
- ***Learning occurs in an environment that fosters and accommodates various ways of being smart.*** **We all have multiple intelligences that need to be accommodated and strengthened. We will discuss this in depth in the next section.**
- ***Learning is a high-energy activity.*** **If not rehearsed, new information will begin to fade after 30 seconds. It is essential that instructors cover new information several times and in a variety of ways.**

The Dunn and Dunn Learning Styles Model

Developed by Rita and Kenneth Dunn, this model, as shown in Figure 2.3.4, emphasizes the organization of the classroom and the use of a variety of instructional activities and procedures. The model is based on the premise that for a student to have the best opportunity to learn, the instructional techniques must match each student's individual learning style. This model does not address the curriculum content or instructional goals and objectives.

The Dunn and Dunn model involves two main activities:

- **Identifying the individual learning style**
- **Planning and implementing learning activities that accommodate the student's individual learning style strengths.**

In this model, the learning style is defined as the preference for or aversion to variables within five identified groups of stimuli.

The five stimuli groups or dimensions encompass environmental, emotional, **sociological,** physiological, and psychological areas. The stimuli deal with how the learners perceive, interact, and respond within the learning environment. Within these groups are 21 variables, or elements, for which a learner may have a preference.

Key Note Term

sociological – pertaining to the science of society, social institutions, and social relationships

Environmental Preferences

- **Sound.** **Do you like background music or do you prefer quiet while studying?**
- **Light.** **Do you prefer dim or bright light while studying or concentrating?**
- **Temperature.** **Do you prefer the room temperature to be cool or warm while engaged in learning activities?**
- **Design.** **Refers to the furniture arrangement that the student prefers. Do you normally sit at a desk (formal) or do you prefer the couch, bed, floor, or pillows (informal)?**

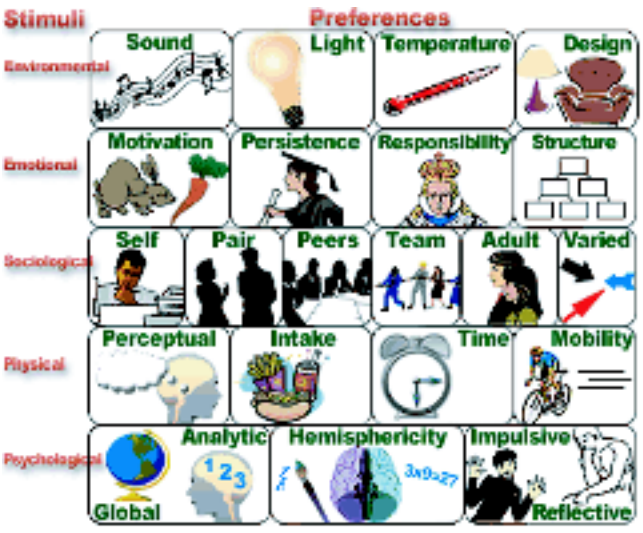

Figure 2.3.4: The Dunn and Dunn learning styles model.
Courtesy of CACI and the U.S. Army.

Emotional Preferences

- **Motivation.** Are you self-motivated to learn? Or are you primarily motivated by adult feedback and reinforcement?
- **Persistence.** This relates to the learner's attention span and ability to stay on task. Do you prefer to work on one task or do you like to work on a variety of tasks simultaneously?
- **Responsibility.** Do you prefer to work independently with little supervision or do you prefer to have frequent feedback and guidance?
- **Structure.** Do you like step-by-step instructions or do you prefer to be given an objective and left alone to decide how to complete the task?

Key Note Term

persistence – to remain unchanged or fixed in a specified character, condition, or position

Sociological Preferences

- **Self.** Do you prefer working on a task by yourself?
- **Pair.** Do you prefer working on a task with one other person?
- **Peers and Teams.** Do you like working as a member of a team?
- **Adult.** Do you like to work with an adult or teacher?
- **Varied.** Do you like routines or patterns or do you prefer a variety of procedures and activities?

Physical Preferences

- **Perceptual.** Are you a visual, auditory, or kinesthetic/tactile learner?
- **Intake.** Do you prefer to drink, eat, or chew gum while studying?
- **Time.** Refers to the time of the day when you have the most energy. Are you an early bird or a night owl or somewhere in-between?
- **Mobility.** Can you sit still or do you prefer to be moving while involved in a learning task?

Key Note Term

mobility – moving from one position to another

Psychological Preferences

- **Global/analytic.** Are you a big picture person or are you more detailed oriented?
- **Hemisphericity.** Do you have left brain tendencies (sequential learner) or right-brain tendencies (simultaneous learner)? This overlaps with the global/analytic preferences.
- **Impulsive/reflective.** Do you tend to make decisions quickly or do you take time to consider all the options?

How Learning Styles Affect Instruction

After you have an understanding of the preferences that affect your learning, how does that understanding translate in the classroom? As you've already learned, the models influence what the teacher does, what the student does, what the classroom looks like, and the materials and learning activities you use.

Teacher's Role

The teacher's primary role in both of these models is that of facilitator and leader. Of course, the first responsibility of the teacher is to identify the student's learning styles. The most effective method is an instrument called a Learning Style Inventory (LSI), which is a self-evaluation that the students complete.

Next, the teacher must arrange the physical classroom to accommodate the different learning styles. Some students might prefer an informal setting, while others might perform better in a more traditional desk and chair.

Finally, the most difficult and time-consuming responsibility of the teacher is to plan and develop a variety of alternate learning activities that will accommodate the different learning styles of the students (role-plays, instructional games, reading, individual assignments, group discussions, writing in a journal, and so on).

Student's Role

Each student is responsible for developing an understanding of his or her learning preferences and using that understanding to enhance his or her own learning experience. Armed with the knowledge of how they learn, students should be able to select appropriate activities so that they will be able to learn more quickly and retain the new information. Studying should be much more productive.

Kolb's Experiential Learning Model

Similar to the Dunn and Dunn model, Kolb's model of experiential learning, as shown in Figure 2.3.5, recognizes the need to address individual differences in learners. Each advocated that in order to be effective, instruction must be modified to accommodate a variety of learners and learning styles.

The Kolb model is a holistic approach to learning that deals primarily with processing preferences by which information is obtained, stored, sorted, and utilized. It defines a four step learning process and then goes on to describe the four learning styles (preferences) used within the process.

The learning cycle is a series of experiences, and each stage of the cycle is associated with a distinct learning style. You can enter the cycle at any of the four processes:

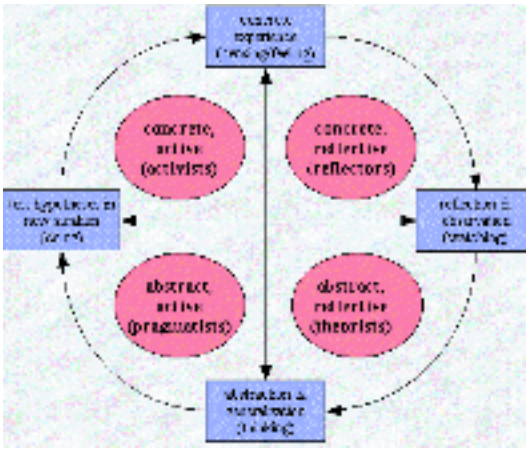

Figure 2.3.5: Kolb's model of experiential learning.
Courtesy of CACI and the U.S. Army.

- **Concrete experience occurs when the learner is actively experiencing an activity (such as a science lab or a field class).**
- **Reflective observation occurs when the learner is consciously reflecting back on that experience.**
- **Abstract conceptualization happens when the learner is being presented with or trying to conceptualize a theory or model of what is (or is to be) observed**
- **Active experimentation happens when the learner is trying to plan how to test a model, theory, or plan for a forthcoming experience.**

The four quadrants within the learning cycle represent the four personal learning styles. Because each is based on two dimensions, it is somewhat more complex than the Dunn and Dunn model. According to Kolb's model, the four learning styles include theorists, pragmatists, activists, and reflectors.

Theorists (or Assimilators)

People who adapt well to this learning style like to learn using *abstract conceptualization* and *reflective observation* (lectures, papers, analogies) and like to ask such questions as "How does this relate to that?" The instructional approach for theorists includes using case studies, readings, and thinking alone. Theorists' strengths lie in their ability to create theoretical models. They are often more global thinkers and are concerned with abstract concepts.

Pragmatists (or Convergers)

People who adapt well to this learning style like to learn using *abstract conceptualization* and *active experimentation* (laboratories, field work, observations). They ask, "How can I apply this in practice?" The instructional approach that works best with pragmatists includes peer feedback and activities that apply skills. They prefer to be self-directed, autonomous learners.

Activists (or Accommodators)

People who adapt well to this learning style like to learn using *concrete experience* and *active experimentation* (simulations, case studies, homework). They tell them-

selves "I'm game for anything." The instructional approach for activists includes practicing the skill, problem solving, small group discussions, and peer feedback. They tend to solve problems intuitively and rely on others for information.

Reflectors (or Divergers)

People who adapt well to this learning style like to learn using *reflective observation* and *concrete experience* (logs, journals, brainstorming). They like time to think about the subject. The best instructional approach to use with reflectors would be lectures that leave plenty of reflection time. Their strengths lie in an imaginative ability.

Our learning comes from all four quadrants, but each person has one favorite form of learning. The ideal learning environment should include each of the four processes, and the learning activities should be flexible so that the learner can spend additional time on his or her preferred learning style.

The following is an example of teaching someone how to ride a bike using the Kolb model of experiential learning:

- **Reflectors: Thinking about riding and watching another person ride a bike**
- **Theorists: Understanding the theory and having a clear grasp of the biking concept**
- **Pragmatists: Receiving practical tips and techniques from a biking expert**
- **Activists: Leaping onto the bike and trying to ride it**

Is There One Best Way to Learn?

Your mind is the most powerful tool you will ever possess. You are accomplished at many skills and can process all kinds of information. However, when you have trouble accomplishing a particular task, you may become convinced that you can't learn how to do anything new. Not only is this perception incorrect, but it can also damage your belief in yourself.

Every individual is highly developed in some abilities and underdeveloped in others. Many famously successful people were brilliant in one area but functioned poorly in other areas. Winston Churchill failed the sixth grade. Abraham Lincoln was demoted to a private in the Black Hawk War. Louis Pasteur was a poor student in chemistry. Walt Disney was fired from a job and told he had no good ideas. What some might interpret as a deficiency or disability may be simply a different method of learning. People have their own individual gifts; the key is to identify them.

There is no one best way to learn. Instead, there are many different **learning styles,** each suited to different situations. Each person's learning style is unique. Knowing how you learn is one of the first steps in discovering who you are. Before you explore your learning style, consider how the knowledge you will gain can help you.

Key Note Term

learning style – a particular way in which the mind receives and processes information

What Are the Benefits of Knowing Your Learning Style?

Although it takes some work and exploration, understanding your learning style can benefit you in many ways—in your studies, the classroom, and the workplace.

Study Benefits

Most students aim to maximize learning while minimizing frustration and time spent studying. If you know your strengths and limitations, you can use techniques that take advantage of your highly developed areas while helping you through your less-developed ones. For example, let's say you perform better in smaller, discussion-based classes. When you have the opportunity, you might choose a course section that is smaller or that is taught by an instructor who prefers group discussion. You might also apply specific strategies to improve your retention in a large-group lecture situation.

Following each of this chapter's two assignments, you will see information about study techniques that tend to complement the strengths and shortcomings of each intelligence or spectrum. Remember that you have abilities in all areas, even though some are dominant. Therefore, you may encounter useful suggestions under any of the headings. What's important is that you use what works. During this course, try a large number of new study techniques, keeping those you find to be useful.

Classroom Benefits

Knowing your learning style can help you make the most of the teaching styles of your instructors. Your particular learning style may work well with the way some instructors teach and be a mismatch with other instructors. Remember that an instructor's teaching style often reflects his or her learning style. After perhaps two class meetings, you should be able to make a pretty good assessment of teaching styles (instructors may exhibit more than one). After you understand the various teaching styles you encounter, plan to make adjustments that maximize your learning. See Figure 2.3.6 for some common teaching styles.

Assess how well your own styles match up with the various teaching styles. If your styles mesh well with an instructor's teaching styles, you're in luck. If not, you have a number of options.

Bring Extra Focus to Your Weaker Areas

Although it's not easy, working on your weaker points will help you break new ground in your learning. For example, if you're a verbal person in a math- and logic-oriented class, increase your focus and concentration during class so you get as much as you can from the presentation. Then spend extra study time on the material, make a point to ask others from your class to help you, and search for additional supplemental materials and exercises to reinforce your knowledge.

Figure 2.3.6: Teaching Styles.

Teaching Styles	
Lecture	Instructor speaks to the class for the entire period; there is little to no class interaction.
Group discussion	Instructor presents material but encourages class discussion throughout.
Small groups	Instructor presents material and then breaks class into small groups for discussion or project work.
Visual focus	Instructor uses visual elements such as diagrams, photographs, drawings, and transparencies.
Verbal focus	Instructor relies primarily on words, either spoken or written on the board or overhead projector.
Logical presentation	Instructor organizes material in a logical sequence, such as by time or importance.
Random presentation	Instructor tackles topics in no particular order or disgresses from the intended topic.

Reprinted from *Keys to Success: How to Achieve Your Goals,* Third Edition by Carol Carter, Joyce Bishop, and Sarah Lyman Kravits (2001), Prentice Hall.

Ask Your Instructor for Additional Help

For example, a visual person might ask an instructor to recommend visuals that would help to illustrate the points made in class. If the class breaks into smaller groups, you might ask the instructor to divide those groups roughly according to learning style, so that students with similar strengths can help each other.

Convert Class Material During Study Time

For example, an interpersonal learner takes a class with an instructor who presents the big picture information in lecture format. This student might organize study groups and, in those groups, focus on filling in the factual gaps using reading materials assigned for that class. Likewise, a visual student might rewrite notes in different colors to add a visual element—for example, assigning a different color to each main point or topic or using one color for central ideas and another for supporting examples.

Instructors are as individual as students. Taking time to focus on their teaching styles, and on how to adjust, will help you learn more effectively and avoid frustration. Don't forget to take advantage of your instructor's office hours when you have a learning style issue that is causing you difficulty.

Career Benefits

Because different careers require differing abilities, there is no one "best" learning style. Develop self-knowledge through honest analysis and then accurately match what you do best with a career that makes the most of your strengths. Specifically, how can knowing your learning style help you in your career?

You will perform more successfully. Your learning style is essentially your working style. If you know how to learn, you will be able to look for an environment that suits you best. You will perform at the top of your ability if you work at a job in which you feel competent and happy. Even when you are working at a job that isn't your ideal, knowing yourself can lead you do on-the-job choices that make your situation as agreeable as possible.

You will be able to function well in teams. Teamwork is a primary feature of the modern workplace. The better your awareness of your abilities, the better you will be able to identify what tasks you will best be able to perform in a team situation. The better your awareness of personality traits—your own as well as those of others—the more skillful you will be at communicating with and relating to your coworkers.

You will be more able to target areas that need improvement. Awareness of your learning styles will help you pinpoint the areas that are more difficult for you. That has two advantages: (1) You can begin to work on difficult areas, step by step. (2) When a task requires a skill that is tough for you, you can either take special care with it or suggest someone else whose style may be better suited to it.

Now that you know you have something to gain, look at some ways you can explore your particular learning style.

Learning Results

So, what are the tangible results of learning? If your parents ask, "What did you learn today?" can you answer the question accurately and completely?

The basic response to new information is to check it against what you already know and then to either discard it, store it, or act on it. As we've discussed, you can do some of this processing unconsciously. When threatened, people can react quickly without rational thought. Detailed memories are stored with events that happen very quickly. That's why a smell or sight can trigger a memory long forgotten; the memory is stored intact, the connections are there, and the whole thing can come back in vivid detail when triggered.

It is important to be able to recall information when you need it and to make connections between different things you've learned. These connections, linking new stimuli to prior knowledge, are called mental maps. The amazing thing is that your brain can actually improve by increasing the number of connections and clarifying your internal mental maps.

These mental maps, or reference points, are among your greatest assets for taking in new data quickly and easily. You need them to have a framework, or schema, in which to store the data. Otherwise, your brain may drop data out of short-term memory without storing it long term, or your brain may store information in a way that prevents access to it.

Conclusion

The learning process enables you to acquire knowledge, skill, and attitudes. As you become more aware of how you learn, you'll be able increase your abilities to absorb new information and apply it in new situations. You'll also remember information longer and improve your recall ability.

Knowing how you prefer to learn and understanding how you do learn are very important aspects that can help you to succeed in school, in your employment, and in your career. Learning models facilitate the process of linking instructional activities to individual learning styles, thereby increasing the learner's ability to acquire and retain knowledge.

The next lesson covers the concept of multiple intelligences. In this lesson you will learn that we use our different intelligences to solve problems, choose a profession, and excel in different aspects of our lives.

Lesson Review

1. **Give an example of your preferred learning environment. Why do you prefer this?**
2. **Are you an auditory, kinesthetic, or visual learner? Why?**
3. **Do you consider yourself an analytical or a global learner? Why?**
4. **Define the term *schema*.**