Chapter 1

Understanding Motivation for Adult Learners

None of us are to be found in sets of tasks or lists of attributes; we can be known only in the unfolding of our unique stories within the context of everyday events.

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Like the national economy, human motivation is a topic that people know is important, continuously discuss, and would like to predict. We want to know why people do what they do. But just as tomorrow's inflationary trend seems beyond our influence and understanding, so too do the causes of human behavior evade any simple explanation or prescription. We have invented a word to label this elusive topic—*motivation*. Its definition varies among scholars depending on their discipline and orientation.

Most social scientists see motivation as a concept that explains why people think and behave as they do (Weiner, 1992). Many philosophers and religious thinkers have a similar understanding of motivation but use metaphysical assumptions to explain its dynamics.

Today, discoveries in the neurosciences offer a biological basis for what motivation is. Although this understanding remains far from complete, what we know about the working of the brain can enrich and integrate fields as disparate as psychology and philosophy. From a biological perspective, motivation is a process that "determines how much energy and attention the brain and body assign to a given stimulus—whether it's a thought coming in or a situation that confronts one" (Ratey, 2001, p. 247). Motivation binds emotion to action. It creates as well as guides purposeful behavior involving many systems and structures within the brain and body (Ratey, 2001).

Motivation is basic to our survival. It is the natural human process for giving behavior its energy and direction (Reeve, 2009). What makes motivation somewhat mysterious is that we cannot see it or touch it or precisely measure it. We have to infer it from what people say and do. We look for signs—effort, perseverance, completion—and we listen for words: "I want to . . .," "We will . . .," "You watch, I'll give it my best!" Because perceiving motivation is, at best, uncertain, there are different opinions about what motivation really is (Shernoff, 2013).

As educators, we know that understanding why people behave as they do is vitally important to helping them learn. We also know that culture, the deeply learned mix of language, beliefs, values, and behaviors that pervades every aspect of our lives, significantly influences our motivation. What we learn within our cultural groups shapes the physical networks and systems throughout our brains to make us unique individuals and culturally diverse people. Social scientists regard the cognitive processes (Rogoff and Chavajay, 1995) and learning as inherently cultural (O'Brien and Rogers, 2016). The language we use to think, the way we travel through our thoughts, how we communicate, and how we mediate moral choices cannot be separated from cultural practices and cultural context. Even experiencing a feeling as a particular emotion, such as sadness or joy or

jealousy, is likely to have been conceptually learned in the cultural context of our families and peers as we developed during childhood and adolescence (Barrett, 2005).

Roland Tharp (Tharp and Gallimore, 1988) tells the story of an adult education English class in which the Hmong students themselves would supply a known personal context for fictional examples. When the teacher used a fictional Hmong name during language practice, the students invariably stopped the lesson to check with one another about who this person might be in the Hmong community. With a sense of humor, these adults brought, as all adults do, their personal experience to the classroom. We are the history of our lives, and our motivation is inseparable from our learning, which is inseparable from our cultural experience.

Being motivated means being purposeful. We use attention, concentration, imagination, passion, and other processes to pursue goals, such as learning a particular subject or completing a degree. How we arrive at our goals and how processes such as our passion for a subject take shape are, to some extent, culturally bound to what we have learned in our families and communities.

Seeing human motivation as purposeful enables us to create a knowledge base about effective ways to help adults begin learning, make choices about learning, sustain learning, and complete learning. Thus, we are dealing with issues of motivation when we as instructors ask questions such as, "What can I do to help these learners get started?" and "What can I do to encourage them to put more effort into their learning?" and "How can I create a relevant learning activity?" However, because of the impact of culture on their motivation, the way we answer these questions will likely vary related to the different cultural backgrounds of the learners.

Although there have been attempts to organize and simplify the research knowledge regarding motivation to learn (Brophy, 2004), instructors often lack the educational knowledge (Guy, 2005) and experience to consistently and sensitively influence the motivation of linguistically and culturally different adult learners (Gay, 2010). Culturally responsive teaching (Ginsberg and Wlodkowski, 2009) and neuroscientific understanding of adult learning (Johnson and Taylor, 2006) are recent areas of inquiry and

practice in adult education. As a result, instructors still tend to rely on their experience, intuition, common sense, and trial and error. Because intuition and common sense are often based on tacit knowledge, unarticulated understanding, and skills operating at a level below full consciousness and learned within our cultural groups, such knowledge can mislead us. For example, some instructors in culturally diverse environments ask students to respond to direct questions about their personal or family history, topics that are most uncomfortable for students whose traditions teach modesty in public settings. These teachers are not mean-spirited or insensitive. More likely, they are trying to be pragmatic. In general, they believe they get more learner participation and emotional involvement from students by asking candid questions and they do not have an effective alternative for generating energetic discussions. And most important, such an approach does not conflict with *their* values.

Without a model of culturally responsive instruction with which to organize and assess their motivational practices, instructors cannot easily refine their teaching. What they learn about motivation from experience on the job and from formal courses is often fragmented and only partially relevant to the increasing diversity in their classrooms and online courses (Linnenbrink-Garcia and Patall, 2016). However, there are a significant number of well-researched ideas and findings that can be applied to learning situations according to motivation principles. The following chapters thoroughly discuss many of these motivational strategies and present a structure, the Motivational Framework for Culturally Responsive Teaching, to organize and apply them in a manner sensitive to linguistic and cultural differences. As we will see, current neuroscientific principles and research offer considerable support for this model and its related ideas.

WHY MOTIVATION IS AS IMPORTANT AS ACHIEVEMENT

We know motivation is important because throughout our lives we have all seen the motivated person surpass the less-motivated person in performance and outcome even though both have similar capability

and the same opportunity. We know this from our experience and observation. We know this as we know a rock is hard and water is wet. We do not need reams of research findings to establish this reality for us. When we do consult research, we find that it generally supports our life experience regarding motivation. To put it quite simply, when there is no motivation to learn, there is no learning (Walberg and Uguroglu, 1980). In reality, motivation is not an either-or condition, but when motivation to learn is very low, we can generally assume that potential learning will be diminished.

Although there have been research studies of adult motivation to participate in adult education programs (Benseman, 2005), no major research studies thoroughly examine the relationship between adult motivation and learning. With an estimated 50 percent of all adults between the ages of twenty-five and fifty-five involved in some form of adult education (Ginsberg and Wlodkowski, 2010) and 58 percent of the US population twenty-five and over reporting some college education (US Census Bureau, 2013), a comprehensive research study on the influence of motivation on adult learning is due.

If we define *motivation to learn* as the tendency to find learning activities meaningful and worthwhile and to benefit from them—to try to make sense of the information available, relate this information to prior knowledge, and attempt to gain the knowledge and skills the activity develops (Brophy, 2004)—the best analyses of the relationship of motivation to learning continue to be found in youth education. In this field of research, there is substantial evidence that motivation is consistently positively related to engagement, learning, and educational achievement (Hulleman and Barron, 2016). There is an increasing number of studies that use motivational strategies in schools and learning environments that indicate that these interventions have a significant impact on student educational outcomes. Encouragingly, a few of these studies have included community college students, some of whom are first-generation, postsecondary adult learners (Silva and White, 2012).

More recently, there has been an increasing amount of research on "engagement" in youth education. As concepts, motivation and engagement

are related (Shernoff, 2013). Motivation tends to be seen as an *individual's* behavior, goals, beliefs, emotions, and thoughts. Research on engagement focuses more on the *observable interaction* between the person and a system or environment with emphasis on activities and relationships. When applied to learning, motivation and engagement studies converge to include active participation in academic activities, recognize the necessity of energy and effort, and acknowledge the influence of culture and context on all learners (Christenson, Reschly, and Wylie, 2012). Thus, we consider engagement to be a motivational construct. Research findings based on engagement studies continue to suggest that motivation positively influences learning (Fredricks, Blumenfeld, and Paris, 2004).

As psychologists have found (Pintrich, 1991), and as teachers know, people motivated to learn are more likely to do things they believe will help them learn. They attend more carefully to instruction. They rehearse material in order to remember it. They take notes to improve their subsequent studying. They reflect on how well they understand what they are learning and are more likely to ask for help when they are uncertain. One needs little understanding of psychology to realize that this array of activities contributes to learning. In a study of adult learners in an urban university, researchers found that when adults perceived their courses as supportive of intrinsic motivation, they were likely to receive higher grades (Wlodkowski, Mauldin, and Gahn, 2001).

Motivation is important not only because it apparently improves learning but also because it mediates learning and is a consequence of learning as well. Psychologically and biologically, motivation and learning are inseparable (Reeve and Lee, 2012). Instructors have long known that when learners are motivated during the learning process, things go more smoothly, communication flows, anxiety decreases, and creativity and learning are more apparent. Instruction with motivated learners can actually be joyful and exciting, especially for the instructor. Learners who complete a learning experience feeling positively motivated about what they have learned are more likely to have a continuing interest in and to use what they have learned (see the section, "How Meaning Sustains Involvement" in chapter Four).

SOME LIMITS TO MOTIVATION'S INFLUENCE ON LEARNING

To maintain a realistic perspective, however, we need to acknowledge that although some degree of motivation is necessary for learning, other factors—personal skill and quality of instruction, for example—are also necessary for learning to occur. If the learning tasks are well beyond their current skills or prior knowledge, people will not be able to accomplish them, no matter how motivated they are. In fact, at a certain point these mandatory learning factors, including motivation, are insufficient. For example, if learners are involved in a genuinely challenging subject for which they have the necessary capabilities, a point will come at which further progress will require effort (motivation), whether in the form of extra practice or increased study time, to make further progress. Conversely, outstanding effort can be limited by the learner's capabilities or by the quality of instruction. Sports are a common example for the limits of capabilities. Many athletes make tremendous strides in a particular sport because of exemplary effort but finally reach a level of competition at which their coordination or speed is insufficient for further progress. An example of the influence of the quality of instruction is a learner who has the capability and motivation to do well in math but is limited by an obtuse textbook with culturally irrelevant examples and an instructor who is unavailable for individual assistance. It is unwise to romanticize or expect too much of motivation. Such a view can limit our resourcefulness and increase our frustration.

One of the indicators of motivation that we most commonly rely on as instructors is effort—generally any form of work or exertion to accomplish a goal (Plaut and Markus, 2005). However, it is important to remember that one's cultural background can influence perceptions of effort. For example, when researchers asked what percentage of intelligence is due to natural ability and what percentage to effort, the average percentage due to effort reported by European Americans was 36 percent and Asian Americans reported 45 percent (Heine and others, 2001). Because we may vary to the extent that we recognize effort, as instructors we need to be vigilant about seeing it because motivated learners probably get more spontaneous encouragement and assistance from instructors than unmotivated learners

do. We are usually more willing to give our best effort when we know our learners are giving their best effort, an important reciprocity that can affect an entire class.

A NEUROSCIENTIFIC UNDERSTANDING OF MOTIVATION AND LEARNING

What happens biologically when we are motivated to learn? The neurosciences have confronted this question directly and provide remarkable information about what happens within our brains and bodies when we are learning. Although most of this knowledge comes from laboratory studies and work with children, much has been learned about the structures of the brain and nervous system that provides a growing biological understanding of motivation and learning (Varma, McCandliss, and Schwartz, 2008). Although this information is not definitive and has not been extensively researched in terms of what happens when adults learn, there is enough agreement in the field of neuroscience about basic structures and processes such as neuronal networks and the function of neurotransmitters to inform teaching in adult education (Johnson and Taylor, 2006).

This book aims to provide a primary understanding of this fundamental research and to use its findings to add support and insight for those ideas that are within the realm of sound adult instructional practice. Ultimately, our ideas about adult learning will need to be considered in terms of their consistency with biological research about learning. In the near future, we will likely build a system of small bridges between neuroscience and education spanning, for example, from findings in cognitive psychology derived from neuroscientific research to adult instruction (Varma, McCandliss, and Schwartz, 2008). In this way we can stimulate, strengthen, and enrich our work with adult learners.

AN OVERVIEW OF THE BRAIN

At its most basic level, learning is a biological function, and the brain and it networks operating together are responsible for this process (Barrett, 2017). At this moment your brain is engaged in seeing letters

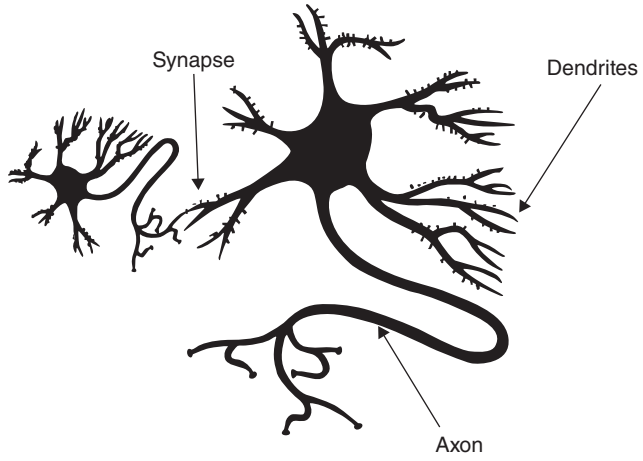
on this page, assembling them into words, connecting those words with meaning, and forming thoughts while it also blocks out distracting sounds such as the air conditioning, noises from the outside, and other people talking. Your brain is doing not only all this but also it is probably suppressing your attention to various odors, sights, and sensations, as well as a few memories and your thoughts about what you might do next after reading this passage. Your brain is also regulating your breathing, blood pressure, and body temperature. And most of the functions just mentioned are happening without any conscious awareness on your part! The brain can do these many different things simultaneously because it is so complex, possibly the most complex object known to us.

Neurons and Neuroplasticity

Estimates are that the adult brain has about one hundred billion neurons (Bloom, Nelson, and Lazerson, 2001). As illustrated in Figure 1.1, neurons have a cell body, a single long branch known as an *axon,* and multiple shorter branches called *dendrites*. The junction where signals pass from one neuron to another is called a *synapse* (see Figures 1.1 and 1.2). Most learning occurs in the brain through the strengthening and weakening of synaptic connections. When we learn new things, long-lasting changes in these neural connections occur through a process called *neuroplasticity* (Merzenich, Van Vleet, and Nahum, 2014). Weaker synaptic contacts fade while stronger connections are sustained. When information enters the brain via electrical impulses, the coordination of these impulses form neural networks that join with other networks. Learning drives this "teamwork." The stronger, the more numerous, and the more coordinated the networks, the greater the potential of the learning to take hold and be available to an individual. Because each neuron may have anywhere from one to ten thousand synaptic connections, the number of different patterns of possible connections in the brain is about forty quadrillion, a staggering number that defies comprehension.

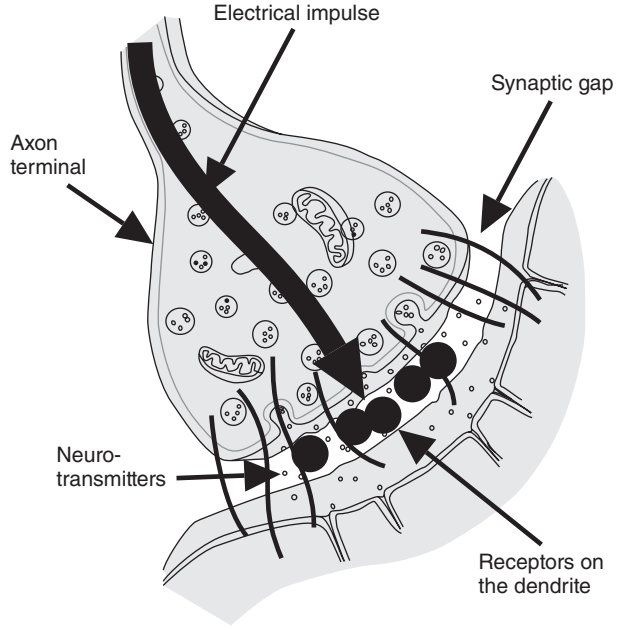
Although there are other cells within the brain, such as glia cells, the neurons are the basic functional cells that appear to control learning. They

Figure 1.1 Two Neurons Connecting



Source: Jensen (2005, p. 17). Used with permission.

Figure 1.2 The Synapse



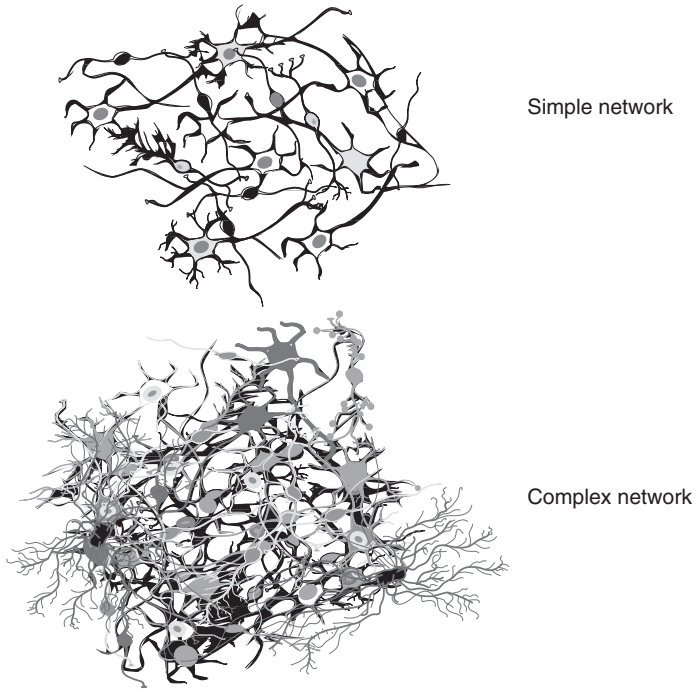
Source: Jensen (2005, p. 18). Used with permission.

encode, store, and retrieve information as well as influence all aspects of human behavior (Squire and Kandel, 2000). Neurons act like tiny batteries sending chemical and electrical signals that create processes to integrate and generate information (Jensen, 2005). The threshold for firing at the synapse is determined by the amount of chemicals (called *neurotransmitters*) released onto the receiving neurons (Bloom, Nelson, and Lazerson, 2001). At the synapse, these chemicals excite the receiving neurons and cause them to fire, or inhibit them from firing, or modify their excitability. Examples of common neurotransmitters are dopamine and epinephrine, which are involved in affecting our emotions and mood (Reeve and Lee, 2012).

When we learn something, such as a new word or the name of a new acquaintance, connections containing that information are made between neurons. Through practice and repetition we strengthen the connections and "learn." Neuroscientists have a cliché: "Neurons that fire together wire together." When we learn something, we are building networks of neurons that represent what we are learning. According to Zull (2002, p. 99), "It seems that every fact we know, every idea we understand, and every action we take has the form of a network of neurons in our brain." The brain is constructed so that a smaller unit of knowledge, such as visual recognition of the number 3, is likely to be located in a smaller network of neurons. Small networks are connected with other small and large networks to resemble a forest of neural networks with tens of thousands of synaptic connections. Just imagine the possible connections one might have to the number 3! Effortlessly, we can think of three aces in a card game, three points of a triangle, and our three favorite desserts. All of these connections are neuronal networks (also called *circuits*) and are apparently dormant before we think of the number 3 but active when we remember it (see Figure 1.3).

From a neuroscientific viewpoint, at the micro level, learning is long-lasting change in existing neural networks. When adults learn, they build on or modify networks that have been created through previous learning and experience. These networks are the adult learners' *prior knowledge*.

Figure 1.3 Neural Networks



Source: Jensen (2006, p. 52). Used with permission.

This is an essential fact that we will return to frequently because it pertains to adults' everyday learning and to their cultural perspectives.

An instructor cannot remove the neural networks that exist in an adult learner's brain (Zull, 2011). They are a physical entity. That is why, as instructors, we cannot simply explain something away, especially if it is a deeply held attitude or belief. Literally, another stronger neural network has to take the place of the current attitude or belief. That biological development takes repetition, practice, and time. Probably new synaptic connections must form and fire repeatedly. A logical explanation or well-constructed argument usually does not have the biological impact to cause the physical changes in a learner's brain that need to occur for a real alteration in the learner's attitude or belief. If a learner is ready to change a particular belief or attitude, an instructor's explanation may be more

persuasive and change can occur. In this case, the learner has developed the neural networks through previous learning and experience, which need only more firing to stabilize in order to change the attitude or belief. However, in most instances, Mager's (1968, p. 39) aphorism holds true: "Exhortation is used more and accomplishes less than almost any behavior-changing tool known."

New learning may be able to lessen the use of and even replace particular neural networks. Neural networks do weaken with disuse (Zull, 2011). For all learning, the most pragmatic approach to instruction is to find ways to connect and build on learners' prior knowledge, to begin with what they already know and biologically assemble with them the new knowledge or skill by connecting the established networks and the new networks. A biological approach to learning requires us to find out what adult learners understand and can do and to see such information as a foundation and a map for what we design for the instructional process. The road to masterful teaching takes a compassionate route.

With the development of neuropsychological tools such as positron-emission tomography (PET) and functional magnetic resonance imaging (fMRI), researchers can study which brain activities are regulated by which brain structures. Both of these instruments are based on the principle that the part of the brain that is most active during a task needs the most oxygen (Bloom, Nelson, and Lazerson, 2001). Although these tools can scan the brain and represent areas high in metabolic activity, they are an indirect assessment of brain structures and their relationship to human action. Based largely on these forms of neuroimaging research and neurosurgery, neuroscientists have categorized areas of the brain and nervous system, aligning them with particular aspects of human functioning and behavior.

According to this scheme, the middle of the brain is known as the *limbic system,* a group of brain structures that regulate our emotions, those feelings that influence our motivation about anything. However, recently, a significant new view of how emotions are constructed has emerged that considers such a localized origin of them to be scientifically untenable. The *theory of constructed emotion* maintains that no emotion such as sadness or

fear has a distinct brain location from which it originates (Barrett, 2017). As Lisa Feldman Barrett (2017) writes, "emotions are not built in but made from more basic parts. They are not universal but vary from culture to culture. They are not triggered; you create them. They emerge as a combination of the physical properties of your body, a flexible brain that wires itself to whatever environment it develops in, and your culture and upbringing, which provide that environment" (p. xii). We will proceed in this book with this perspective, realizing that we are in the midst of a radical progression of theories and research in neuroscience that may eventually require us to rethink how we understand emotion, mind, and the brain.

The brain is part of a nervous system that extends to every part of the body. There is strong connectivity within the brain and between the brain and the rest of the nervous system. The brain works so well because its individual structures are so efficiently interdependent.

Our current knowledge of the central nervous system is still inadequate to explain with specific certainty how the brain operates (Reeve and Lee, 2012). The brain's dynamism also makes it an elusive subject for study. As Jensen writes (2005, p. 11), "Whether you are 2 or 92, your brain is a cauldron of changing chemicals, electrical activity, cell growth, cell death, connectivity, and change." For these reasons we need to use our knowledge of the brain judiciously to discuss learning and motivation. Before we carry out any instructional ideas based on neuroscience, we need to understand how well they are integrated and consistent with our current models, research, and practice in adult education.

A Neuroscientific Perspective of Motivation

Merging a neuroscientific understanding of motivation with current knowledge from psychology and education creates ideas that are richer, more nuanced, more complex, and, fortunately, quite promising. The brain has evolved over millions of years as the major organ for ensuring human survival. As human beings, we *want to learn* because learning is our means for survival. Knowing what to fear and what to desire is essential to our future. We use cognition to maintain control and to generally navigate

away from fear and toward pleasure. Neuroscience regards the motivational, cognitive, social, and emotional dimensions of learning as integral to human behavior (Montague, King-Casas, and Cohen, 2006).

The brain has an inherent inclination for knowing what it wants. In human terms, that means relevance (Ahissar and others, 1992). We are compelled to pay attention to things that matter to us. Every moment of our lives is a competition among our senses to perceive what matters most. Our emotions usually tell us this, often before we can reflect on the situation and especially when we feel threatened. What matters is defined through our cultural perspectives, which carry language, values, norms, and perceptual frameworks to interpret the world we live in.

As we experience our world, events that are accompanied by feelings receive preferential processing in the brain (Christianson, 1992). Because they are salient for survival, emotions add importance to our thoughts and experiences. Neurotransmitters enable neural networks to construct emotions to us moment by moment (Barrett, 2017). For example, the neurotransmitter dopamine is usually connected with feelings of pleasure and elation, and norepinephrine seems to induce a state of arousal (Reeve and Lee, 2012).

Although emotions capture our attention, we spend most of our waking hours in mind-body states that are made up of sensations (for example, hunger and fatigue), emotions (joy and anger), and thoughts (optimism and concentration) that combine and recombine simultaneously (Damasio, 1999). These mind-body states are made up of millions of neurons in complex web-like signaling systems that represent our behavior. They are quickly shifting neural networks. Jensen (2005) draws an apt analogy when he compares their operation to the dynamic atmospheric patterns similar to what we see in the weather. From a neuroscientific perspective, when we are doing something, these mind-body states represent our motivation. We are likely to identify them by the emotion or mood most obvious to us at the moment, such as "I'm getting *bored* with reading this textbook." Although our mind-body state may seem stable as we proceed with a task, in reality it is in a state of flux, diminishing, strengthening, or changing into another state. On the single page of a book or in the span of five minutes in

a course, we may go from feeling inspired, to feeling frustrated, to feeling creative, and then inspired again.

The theories of intrinsic motivation fit very well with this neuroscientific understanding of motivation. As defined by Ryan and Deci (2000, p. 16), "intrinsic motivation is entailed whenever people behave for the satisfaction inherent in the behavior itself." For example, people read a novel because they find it inherently interesting. Behavior that people find intrinsically satisfying probably conforms to what their brains are physiologically disposed to want and induces or is compatible with a positive mind-body state.

We know from psychological research that it is part of human nature to be curious, to be active, to make meaning from experience, and to be effective at what we value (Lambert and McCombs, 1998). These are primary sources of motivation that reside in all of us, across all cultures. When adults can see that what they are learning makes sense and is important according to their values and perspective, their motivation emerges. Such circumstances elicit intrinsic motivation and probably facilitate a mind-body state conducive to learning. Intrinsic motivation is evoked; it is a physical energy aroused by an environment that connects with what is culturally relevant to people. And as conceived by the neuroscientific scholar Linda Feldman Barrett (2017), it is an interoceptive activity, a feeling constructed from all the sensations in our bodies and the instantaneous melding of our neuronal networks.

Although there are extremely few neuroscientific studies of intrinsic motivation, among those that exist argue that we need to create challenging learning environments to access what biologically motivates people from within (Murayama and others, 2010). In addition, intrinsic motivation is probably more emotionally salient and varied than it was originally conceived to be. We feel many different emotions while learning, and they may not all be consistently positive. As instructors, we need to pay close attention to the emotions of adult learners and construct with them a learning environment that supports the optimal expression of their emotions in service of their learning. This topic will be addressed throughout this book.

Although Csikszentmihalyi's theory of intrinsic motivation and flow (1997) directly addresses the importance of feedback in learning, a

neuroscientific perspective also emphasizes that feedback is essential to the human need for survival. For how the brain operates, this means the feeling of being in control. Feedback about one's learning and behavior significantly contributes to one's sense of control and is vital to intrinsic motivation and improving learning (Zull, 2002). Even the basic awareness of having given correct or incorrect answers without any benefit of external reward can activate the dopamine system in people (Tricomi and others, 2006). Extensive coverage of strategies to enhance feedback is found in Chapter Nine. Discussion of how essential feedback is to online learning is found in Chapter Five.

THE INTERSECTION OF CULTURAL RELEVANCE, INTRINSIC MOTIVATION, AND NEUROSCIENTIFIC UNDERSTANDING

Stephen Brookfield (1996, 2015) has consistently emphasized the need for a culturally relevant perspective of adult learning: "The differences of class, culture, ethnicity, personality, cognitive style, learning patterns, life experiences, and gender among adults are far more significant than the fact that they are not children or adolescents" (1996, p. 379). The cultural context is recognized as an essential consideration for defining as well as facilitating adult learning (Merriam and Bierema, 2014). Theories of intrinsic motivation respect the influence of culture on learning. They include the understanding that the learner's perspective, language, values, and ways of knowing must be considered in order to foster adult motivation to learn (Ginsberg and Wlodkowski, 2009). When adults care about what they are learning and know they are becoming more effective at what they value by means of that learning, their intrinsic motivation surfaces similar to a cork rising through water. The instructor can feel it when the learning environment has stimulated the adults' neurophysiological propensity (Ahissar and others, 1992) to provide energy for what matters!

Intrinsic motivation is governed to a large extent by emotions, which in turn are socialized through culture. Emotions influence task engagement, the visible outcome of learner motivation. For example, one person working

at a task feels frustrated and stops; a second person working at the task feels joy and continues; and yet another person, with a different set of cultural beliefs, feels frustrated at the task but continues with increased determination. The response to the task—frustration, joy, or determination—may differ across cultures because cultures differ in their definitions of novelty, hazard, opportunity, and gratification and in their definitions of appropriate responses (Kitayama and Markus, 1994). Thus, a person's response to a learning activity reflects his or her culture.

From this viewpoint, culturally responsive teaching is necessary if we are to teach all adults effectively. Even though the learners' internal logic may not coincide with our own, it is present nonetheless. To be effective we must understand that perspective. Rather than trying to figure out what to "do to" learners, we should "work with" them to elicit their intrinsic motivation. Through relationships and teaching strategies, we access their prior knowledge (existing systems of neural networks), as expressed through their cultural perspectives, in order to build bridges between what adult learners know and their new learning. Seeing adults as unique and active, we emphasize communication and respect, realizing that through understanding and sharing our resources we create greater energy for learning. When it is working, excellent teaching and learning is like breathing together.

EMOTION, MEMORY, AND INTRINSIC MOTIVATION

Research in the neurosciences and the field of intrinsic motivation indicates that emotions are critical to learning (Reeve and Lee, 2012). Not only do emotions largely determine what we pay attention to and help us to be aware of our mind-body states but also they affect what we remember. We are much more likely to remember things that engage us emotionally.

Long-term memory, durable neural networks, seems to be strongly affected by emotions. We know now that long-term memory is not a permanent trace or print of a past event. It works dynamically, reassembling feelings and information from our past into our present understanding. For example, during stressful experiences, hormones such as adrenaline

and cortisol are released. They heighten alertness and mobilize parts of the nervous system responsible for movement. They also enhance memory of the experience (LeDoux, 1996; Abercombrie and others, 2003). These hormones are likely to have been present while some of our strongest memories—such as those of births, deaths, and romances—were being made. These chemicals help to create a system of sounds, images, and locations represented by neural networks that are activated, reintegrated, and further constructed when they are stimulated by an experience or object such as a question, a person's face, or a particular song (Shimamura, 2002; Barrett, 2017). In the moment, we recall a memory, unaware that thousands of neurons have fired in a particular pattern involving multiple locations in our brain and nervous system.

The biological process of how emotions affect memory is complex and our understanding is incomplete. However, we are reasonably certain that moderate stress and positive emotions such as satisfaction, joy, and feeling creative help us to retain what we are learning and to reassemble what we have learned when we need to recall it (Zull, 2002; Reeve and Lee, 2012). Emotions also give texture to events and help us to understand them. Because neurotransmitters, such as dopamine, that are associated with pleasurable emotions tend to be released in situations of moderate challenge and excitement, we as instructors can create lessons that encourage these emotions and consequently create a better memory for what is being learned.

In theories of intrinsic motivation, emotions are critical to learning as well. Optimal emotional states for learning, such as flow, have been extensively studied and documented across and within cultures (Csikszentmihalyi and Csikszentmihalyi, 1988). When people are in flow—whether at work, play, or while learning in a course—they feel totally involved, immersed in a seemingly effortless performance, fully alive, and without self-consciousness (Csikszentmihalyi, 1997). Often while being in flow, people report feelings of joy, happiness, creativity, and capability. Emotionally, intrinsic motivation is not static and does not remain constant during learning or work. Flow is one of the most positive states of intrinsic motivation. During this time we are fully absorbed, emotionally positive, and very focused. In other intrinsically motivating situations we may be

less consistently involved, only mildly interested, and, at times, feel a bit worn or fatigued. We may need to use mental discipline, willfully applying steady effort to remain focused (Nakamura, 2001). Emotions are labile, neurophysiologically undergoing chemical and biological change. A simple distraction, such as the noise of construction work outside the classroom, can disrupt our concentration. The processes of reading, writing, listening, and problem-solving undulate with varying degrees of stimulation and appeal whatever their source.

Our experience as teachers and learners is that intrinsic motivation often fluctuates during a learning activity. Overall, we may judge our involvement as intrinsically motivated but with periods when we are bored or disinterested. For an entire learning experience, it might be more accurate to gauge our intrinsic motivation along a scale from mildly intrinsically motivated to deeply intrinsically motivated or in flow. However, such a measure does not register all the possible emotions that we may have felt during the learning activity, such as interest, wonder, worry, and doubt. Also, we know from experience that the degree of value that adults have for an activity affects their perception of how motivating that activity is. For example, writing, at times, can be frustrating and tedious. Our value for it is obviously strong and there are periods when we seem to be anesthetized from the tedium. But moment to moment, it is our emotions that tell us the degree of our intrinsic motivation for the task at hand. Given the physiology and dynamics of brain functioning, an understanding of intrinsic motivation as a supple phenomenon is fitting.

UNDERSERVED AND DIVERSE ADULT LEARNERS IN POSTSECONDARY EDUCATION

Adult participation in formal learning (in an institution such as a college or business that leads to credits or some form of certification) has reached unprecedented levels (Ginsberg and Wlodkowski, 2010). This upsurge in participation is because of several reasons, including technological advancements such as online learning, innovative flexible educational programming, the exploitation of adults as a profitable learning market,

widespread social acceptance of globalization as a challenge to national economic sustainability, and awareness among middle-income adults that education is the vehicle to career enhancement. Out of context, the sheer numbers are startling: mega transnational universities such as the University of Phoenix with adult student enrollments beyond two hundred thousand (Hammond 2014, p. 63); 7.1 million students (33.5 percent of all college students) taking at least one online course in 2013 (Allen and Seaman, 2014); more than 360 colleges and universities offering accelerated learning programs created specifically for working adults (Commission for Accelerated Programs, 2008); and an estimated 90 million adults participating in formal and informal education including adult basic education, English language learning, workplace learning, and personal development classes (Paulson and Boeke, 2006).

Adult Participation in Context

Yet, when these numbers are examined through the lens of income, race, ethnicity, disability, and credential and degree completion, troubling disparities and challenges emerge. Although more than 67 percent of high school graduates enroll in college, approximately two-thirds of those who attend are unprepared for the demands of a postsecondary education (Kirp, 2015). The most underserved group in adult education is the poor (McSwain and Davis, 2007). Among low-income adults aspiring to earn an associate or bachelor's degree, only 8 percent earned the former and 7 percent the latter within six years (Cook and King, 2004). In 2017, we could not find evidence that these proportions among low-income adults have significantly changed. In workplace learning, similar discrepancies exist in whose learning gets supported, with businesses prioritizing learning programs for top management and knowledge workers rather than low-skilled, low-income learners (Watkins and Marsick, 2009). Although people with disabilities represent one-fifth of the US population, their completion rates for attaining a bachelor's degree are minimal (Fabian and Liesener, 2005). In spite of the fact that women earn more bachelor's degrees in science, technology, engineering, and mathematics

than do men, they earn a much smaller percentage of doctorates, especially in the better paying fields of engineering (12 percent), computer sciences (15 percent), and physical sciences (21 percent) (National Science Foundation, 2004). The estimated 11 million undocumented workers residing in the United States are among some of the hardest workers with the fewest opportunities for advancement through adult education. These statistics reflect the legacy of historical injustices and the great difficulty of achieving equity through formal learning.

Since the mid-1970s, while productivity gains and economic growth continued in the United States, wages began to stagnate. As of 2013, the median household, after adjusting for inflation, was earning less than it did in 1989 (Reich, 2015). In 2014, more than two-thirds of people in this country were living from paycheck to paycheck. In addition to this stagnation of middle- and low-income wages has been the crushing recession of 2008, further dampening economic opportunity for most people. Moreover, there has been a deterioration of support for public higher education, partly because tuition has soared. Although students and their families in 2004 paid about one-third of the cost of their college tuition, today they are on a track to pay for most of it. College students, 75 percent of whom are adults, particularly those attending for-profit, career colleges, have the double burden of debt and joblessness whether they graduate or not (Mettler, 2014a). In 2012–2013, the students who borrowed money to attend a four-year college, most of whom were adults, had a cumulative debt averaging $25,600 (Hammond, 2015, p. 45). Among historians there is an emerging consensus that the US ideal of creating a prosperous middle class that can make life better for each succeeding generation has come to a halt (Gilmore and Sugrue, 2015).

With all these deleterious obstacles and hazards, a certificate or a college degree still matters greatly. A college graduate in the United States earns on average $23,441 more per year than a high school dropout. From 2000 to 2012, the full-time employment rate for young adults (twenty-six to thirty years old) with less than a BA declined substantially to 53 percent for those with only a high school diploma, compared to 70 percent for those with a BA. Not only is making learning more accessible and motivating at every

level of education a matter of equity, it has significant pragmatic value (Carnevale, Hanson, and Gulish, 2013). Higher education makes a substantial difference for each individual and society, from personal quality of life to the economic place of our society in a global world. As Kuh and his colleagues (2015, p. 2) write, "The big question is this: How will colleges and universities in the United States both broaden access to higher learning and also enhance student accomplishment and success *for all students* [their italics] while at the same time containing and reducing costs?"

Community Colleges: An Endangered Haven for Students of Color and Low-Income Adults

One of the important changes since the last edition of this book has been the greater public recognition of the importance and impact of community colleges as a social and educational structure that benefits all. Within the last decade, roughly 80 percent of high school graduates attend college within eight years of graduation, and undergraduate enrollment is six times greater than it was six decades ago (Attewell and others, 2007). With 46 percent of its students twenty-five or older, community colleges are the largest gateway for adults and nontraditional students—70 percent of the college population—to enter postsecondary education (Staley, 2013). Almost all of the 1,200 community colleges in the United States are open-access institutions enrolling a much broader variety of students than four-year colleges: students of color, low-income students, students with lower academic achievement in high school, and part-time adult students (Bailey and Alfonso, 2005).

Breaking these numbers down further: in 2012, 49 percent of all black undergraduates and 56 percent of all Hispanic undergraduates were enrolled at community colleges (American Association of Community Colleges, 2013). However, "as of 2008, only 42% of 25- to 34-year-olds in the United States had attained an associate degree or higher. Only 30% of African Americans and 20% of Latinos ages 25 to 34 had attained an associate degree or higher compared to 49% of White Americans and 71 percent for Asian Americans" (Lee and Ransom, 2011, p. 9). Black men

in community colleges do not fare well, with 68 percent of those who start college not graduating in six years, the lowest completion rate among both sexes and all racial and ethnic groups (Harper, 2006).

As the report *Aspirations to Achievement: Men of Color and Community Colleges* (Center for Community College Student Engagement, 2014a, p. 4) points out, "Race and ethnicity intersect in complicated ways with gender, socioeconomic status, college readiness, and other factors." Carnevale and Strohl (2013) highlight this discrepant interaction with their finding that although black and Latino students with above-average SAT or ACT scores complete college at a 73 percent rate in upper-tier colleges, those in open-access schools graduate only at a 40 percent rate. They conclude, "There are significant differences in outcomes among equally qualified whites, African Americans, and Hispanics that derive from the increasing relegation of African-American and Hispanic students to the crowded, underfunded, open-access, two- and four-year colleges" (Carnevale and Strohl, 2013, p. 24). This perception is confirmed by the report, "Bridging the Higher Education Divide: Strengthening Community Colleges and Restoring the American Dream" (Century Foundation, 2013), which concludes that community colleges are underfunded and under-resourced although they enroll a disproportion of low-income and minority students—an example of separate and unequal educational systems in higher education. Yet, we take the position, as do other authors, scholars, and practitioners, that recognition of racial structural bias cannot distract from the present need for changes in community colleges and universities to improve climate, staffing, and educational practices committed to achieving equity for *all students* (Center for Community College Student Engagement, 2014b).

INSTRUCTION AS A PATH TO IMPROVING EDUCATIONAL SUCCESS AMONG ALL ADULTS

Rather than accept structural racism in our institutions, we are responsible for disrupting the status quo that permeates current higher education and adult education (Howard, 2008; Wilson, 2009; Coates, 2015). As practitioner scholars, our focus and the purpose of this book are to advocate and

demonstrate how instructors, teaching, and learning environments can enhance the motivation of *all adults*. We strongly agree with the finding of the Center for Community College Student Engagement (2014a, p. 4) that "colleges can better serve men of color [and, in our opinion all adult learners] by implementing effective educational practice for all students while also emphasizing campus diversity, cultural competence, and other strategies for reducing stereotype threat." However, the largest number of adult learners, approximately 61 million, participate in work-related courses and training (Paulson and Boeke, 2006). *Unless specifically referenced to higher education, all instructional methods, principles, and models suggested in this text apply to this population as well.*

One important and hopeful indicator that we can make a difference as adult educators is to realize that "on-time" college graduation as a valid criterion of academic success in postsecondary education is questionable (McCormack, Schnee, and VanOra, 2014). Adult learners stop out for responsible personal and professional reasons, returning to complete their certificates and degrees at a later date beyond the typical expectation of three years for an associate degree and six years for a bachelor's degree.

As an example, Attewell and others (2007) tracked women who enrolled in the City University of New York system and found that within thirty years, 70 percent had completed a degree, with three-quarters of them having earned a bachelor's degree. In their parallel analysis of data from the Longitudinal Survey of Youth, which tracked college students from 1980 until 2000, they found that the graduation rate for students entering college with an average of C or below was 50 percent. Most degree recipients took longer than six years, with the largest percentages being women, students of color, and low-income students. Because of circumstances such as having to earn an income and taking care of their families, they needed more time than average to complete a degree. Many of today's adult learners are intermittent students who stop out. Education has to be fitted to the rest of their lives.

Among the greatest losses for our society when underserved adult students are not present in our college programs are their cultural perspectives and aesthetics. As microcosms of the broader society, college courses

often implicitly and explicitly perpetuate stereotypes and larger systems of inequality, such as conspicuous consumption without consideration of the common good.

Adult students from underrepresented economic backgrounds and ethnic or racial groups can offer ideas, language, examples, and frames of reference that can help majority groups examine ways in which they may unknowingly use dominant beliefs and values that inhibit the welfare of others. For example, individual freedoms may favor the more privileged. And how government monies are allocated is a topic likely to be more informed by adults from different income groups.

In general, diversity as a broad category including race, class, gender, ethnicity, sexual orientation, religion, disability, age, and other significant differences is central to education as preparation to live and work within a global economy with many different kinds of people. In fact, research with traditional-age college students indicates that when they are exposed in their courses to diverse perspectives through interaction with students different from themselves, they develop more complex thinking skills and learn more (Gurin and others, 2002). Our personal experience with adult students supports this finding. For a more equitable and effective pluralistic society, we need to learn with diverse adults.

Thus far, no single policy, program, or response has significantly raised the persistence and degree completion of adult learners at a scale that has been implemented nationally (Ginsberg and Wlodkowski, 2010; Karp and Bork, 2014). What is required is a system-wide effort to improve a range of elements from financial assistance to instruction. In our opinion, some of the books and reports that outline, discuss, and offer examples of these elements and how they might be implemented are *Improving Lives through Higher Education: Campus Programs and Policies for Low-Income Adults* (Cook and King, 2005), *A Matter of Degrees: Promising Practices for Community College Student Success* (Center for Community College Student Engagement, 2012), *What Excellent Community Colleges Do: Preparing All Students for Success* (Wyner, 2014), and *Using Evidence of Student Learning to Improve Higher Education* (Kuh and others, 2015). There has also been planning from the president's office to fund tuition for community college

on a national basis, a policy we heartily endorse that would affect nine million educationally underserved people ("Obama's Free Community College Plan . . .," 2015). Whatever the present politics, it is our informed research that supports this policy or its equivalent.

The focus of this book is on how instructors, teaching, and learning environments, online and face-to-face, can enhance the motivation of all adults to learn. Researchers have found that improvements in instruction can contribute to increased student motivation, persistence, and success (Comings, 2007; Center for Community College Student Engagement, 2012, 2014b; Kuh and others, 2015; Fong and others, 2017). Their suggestions include more active learning, greater relevance of subject matter to students' lives, use of collaborative and cooperative learning methods, and higher levels of student engagement. When the Center for Community College Student Engagement (2014a) conducted more than thirty student focus groups with black men, Latinos, and white men at an array of community colleges, these students generally agreed on these four key points (p. 8):

Personal connections matter. Students value having a sense of belonging and *someone who believes in me* [their italics].

High expectations matter. Students report that being held to high expectations can drive them to excel.

Instructor qualities matter. They highly value faculty members who show interest in their students as well as the subject matter and who demonstrate a commitment to helping students learn.

Engagement matters. The Center hears loudly and consistently that students believe engagement is important.

For adult learners at postsecondary institutions, who spend most of their time either online or in a learning environment, these essential qualities will have to come to life through an instructor and the instructional process.

When we look at best practices for adult learners in postsecondary institutions we find they include these instructional factors as well as the use of the language of the learners and their communities and assessment

of learner competence through performance outcomes (Flint, Zakos, and Frey, 2002).

We can see convergence between the recommendations from research to improve student success in college and the literature about best practices for adult learners. This gives us more confidence about what we need to do in the area of instruction to enhance adult learning and motivation. The Motivational Framework for Culturally Responsive Teaching (Wlodkowski and Ginsberg, 1995), which forms the major focus of this book (see Chapter Four), systematically includes these instructional practices as an integral aspect of instructional design and teaching. The use of this motivational framework has been significantly associated with higher grade point averages (Wlodkowski, Mauldin, and Gahn, 2001) and higher performance (Wlodkowski and Stiller, 2005) among adult learners online and for eliciting intrinsic motivation to learn for all learners in classroom and out-of-classroom learning environments (Barnes, 2012). This framework can serve as an effective guide for educators and trainers as we plan and carry out our instruction with adult learners. A strength of this model is that it recognizes that human motivation is inseparable from culture and at the same time understandable as energy resulting from neurobiological processes. This approach to teaching allows for a useful integration of these two important sources of pedagogical knowledge. In the next chapter we will deepen our understanding of motivation to learn as it relates to adult development and a macrocultural perspective toward diversity and instruction.