

# **METHODS TO INCREASE LEARNING INVOLVEMENT AND ACHIEVEMENT IN THE AFFECTIVE DOMAIN**

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## **Abstract**

Research has shown that emotion is a more powerful influence on learning than cognition. Yet, researchers still often struggle to understand how emotions impact learners and learning. Adults are more sensitive to peer pressure than children. They have a deep need to be self-directed and cannot be forced to learn. Adults tend to prefer single-concept, single-theory courses that focus on applying the concept to relevant problems. Their learning is life-centered. And, adults need to know “what’s it if for me?” This paper attempts to (1) demonstrate the relationship among these key adult-learning principles to the affective domain and learning, (2) look at the human brain structure and how it relates to learning (3) review the twelve laws of emotion and links them with effective instructional design and training techniques, and (4) discuss the role of emotional intelligence in learning. Cognitive and affective theories of learning will be discussed as well as information surrounding how to promote learning in the affective domain using effective training methods.

## Question

*Research has shown that emotion is a more powerful influence on learning than cognition. Identify key emotional factors that play a role in learning, such as readiness, attitude, prior experience, timing, etc. Analyze proven methods and techniques instructors can use to increase learning involvement and achievement in the affective domain.*

How do emotions affect learners and learning? Philosophers and educators as early as Socrates, Plato, and Aristotle, contemplated the answer to this question. As time passed, prominent theories regarding how individuals learn, process, and remember information began to evolve. Research studies (Goleman, 1995; Jensen, 1997; LaFreniere, 2000; Solomon, 1993) found that several affective characteristics such as attitude, self-efficacy, values, self-concept, and interest could have a profound impact on what and how individuals learn. Studies are also showing that enrichment, nutrition, exercise, attitude, lifestyle, posture, and feelings play a role in emotions and learning (Damasio, 1994; Goldman, Klantz, & Berger, 1999; Jensen, 1997; LeDoux, 1989; McGaugh, 1989).

This paper looks at how facilitators and instructional designers can make learning more effective and memorable by linking instruction to the affective domain. It begins by defining affect, cognition, emotion, and emotional intelligence. Next, a brief description of brain anatomy and brain structure is provided. Once the physical brain is reviewed, a section on the learner's physiological state offers insight on attitudes and moods focusing on both fear and happiness. Since a learner's physiological state also affects behavior and values, these concepts are discussed next. The paper also looks how meaning, self-efficacy, and interest play a vital role in learner motivation. Finally, applied learning principles are communicated incorporating the role of preference and change.

## Definitions

To facilitate common understanding, this section provides definitions and descriptions of the basic concepts reviewed in this paper.

### *Affect*

*Affect* is defined as “the conscious subjective aspect of an emotion considered apart from bodily changes” (Merriam Webster Collegiate Dictionary, 1996, p. 19). Frijda (1993) defines affect as “The irreducible aspect” of emotion “that gives feelings their emotional, noncognitive character” (p. 383). Affect is the predisposition to mood and emotion. A mood, feeling, evaluation, or arousal caused by external stimuli (such as hunger, fear, anger, or surprise) that interrupt the current state (Anderson & Guerrero, 1998) and is a result of affect.

*Interruption* occurs when one's focus is lost or shifted from inputs in short-term memory. *Arousal* occurs when the autonomic nervous system and the endocrine system are stimulated, causing an interruption in long-term memory. Arousal of the sympathetic nervous system increases emotions, which often occurs when there is an interruption to one's plans or actions or when unexpected events occur. This, in turn, causes the individual to look for an explanation or a cognitive interpretation of the event (Cornelius, 1996). Practitioners may apply the concept of arousal to training and instructional design by developing an environment that creates

unexpected opportunities and techniques for learning. For example, participants may be asked to arrange the material presented in the class according to their individual and collective needs. This creates a sense of ownership and involvement that is not present when instructors make all the decisions.

To measure the affective domain, Bloom developed a taxonomy that can be used to write educational objectives. Affective levels include:

- *Receiving* – having awareness toward the environment
- *Responding* – behaving differently as a result of experience
- *Valuing* – becoming involved in a situation and demonstrating commitment
- *Organization* – prioritizing one’s values and beliefs
- *Characterization by value* – incorporating a new value into one’s daily routine consistently (Krathwohl, Bloom, & Masia, 1956; Woolfolk, 1990).

### ***Cognition***

*Cognition* is “the act or process of knowing including both awareness and judgment” (Merriam Webster Collegiate Dictionary, 1996, p. 223). Cognitive topics included memory, attention, perception, language, and thinking. Simon (1982) relates moods to cognitively established goals that often create a context that is then associated with long-term memories. Evaluations are made based on information retrieved from long-term memory (Linville, 1982; Simon, 1982). To measure the cognitive domain, Benjamin Bloom developed a frequently used taxonomy to write educational objectives. Cognitive levels include:

- *Knowledge* – remembering or recognizing information without having to understand, use, or change it
- *Comprehension* – understanding information without having to relate it to anything else
- *Application* – solving a problem using a general concept
- *Analysis* – separating information into parts
- *Synthesis* – combining thoughts and ideas to create something new
- *Evaluation* – assigning value or weight to information or processes to determine the best method to use in a given situation (Bloom, 1956; Woolfolk, 1990)

### ***Emotion***

The word *emotion* comes from the Latin-root *motere* meaning to move and the prefix *e-*, which connotes move away. The study of emotion has been divided into several categories including motivation, emotion, cognition, and consciousness (Bain, 1977; Izard, 1993; MacLean, 1973). Emotion, such as fear or anger, and one’s response toward it has been studied for centuries. Since emotions are directly related to external stimuli, individual reactions vary greatly based on previous experiences. Emotion has been characterized by four components: (1) cognitive, (2) action readiness, (3) feelings, and (4) physiological change. *Cognitive components* refer to how individuals perceive or interpret an emotional event. *Action readiness* concerns an individuals’ desire to take action. *Feelings* cover the range of emotion (happiness, sadness, anger, love, fear, hate, joy, etc.). *Physiological change* refers to physical changes or reactions in the body (Guerrero, Anderson, & Trost, 1998).

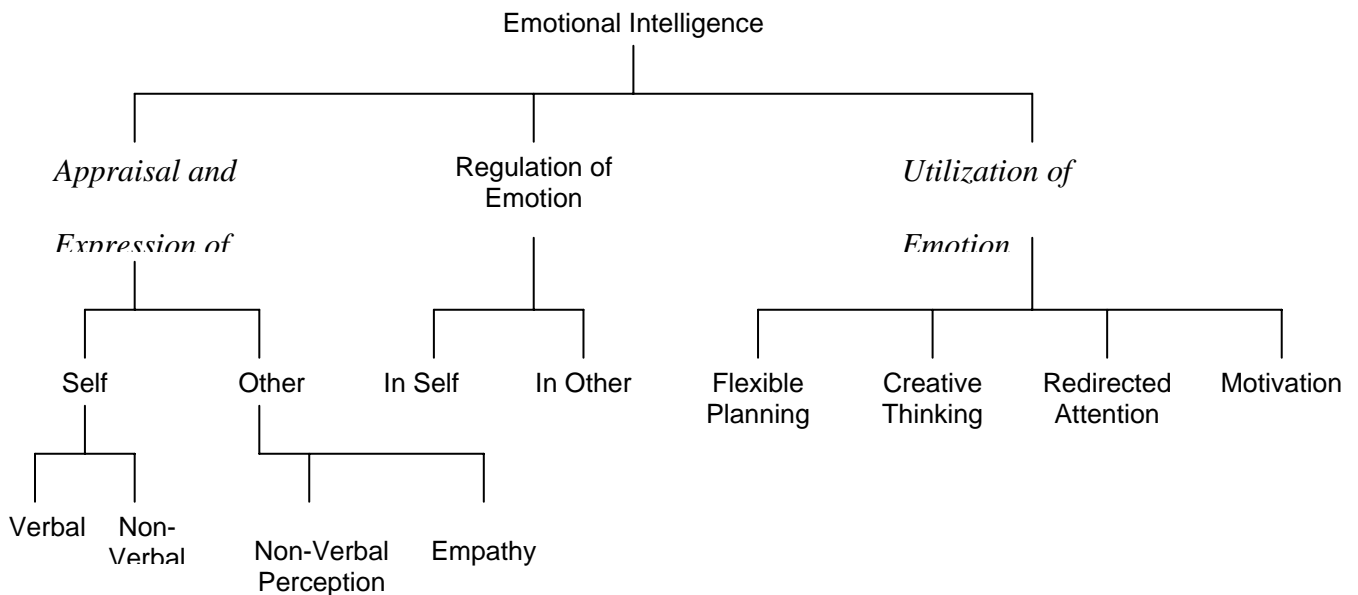
According to Cornelius (1996), most experts will agree that emotions involve “subjective experiences, expressive reactions, physiological reactions, behavior of various kinds, and particular kinds of cognitions” (p. 10). Others simply state that emotion is a response to significant personal events that involves some change in active readiness be it a shift in attention, excitement over possible events, or boredom. However, basic empirical regularities (laws) of emotion have been established that provide automatic rather than voluntary responses to certain situations.

“Emotions influence selective attention, event interpretation, motivation, prediction, recall, decision-making, problem-solving, learning (Jensen, 1995, p. 41). Leeper (1948) suggested that *emotions* are primarily motivating forces; they are “processes which arouse, sustain, and direct activity” (p. 17).

***Emotional Intelligence***

Defined as ability to accurately identify one’s own feelings as well as the feelings of others and use that information to guide decisions and thoughts, *Emotional Intelligence* (EI) has quickly become a primary staple of training programs in recent years. Individuals who have high emotional intelligence exude qualities such as self-confidence, personal integrity, knowledge of personal strengths and weaknesses, self-motivation, optimism, initiative, perseverance, and they handle change well. Figure 1 outlines the domains of emotional intelligence (Cherniss & Adler, 2000; Goleman, 1995; Salovey, Hsee, & Mayer, 2001).

Figure 1: Domains of Emotional Intelligence<sup>1</sup>



<sup>1</sup>From Salovey, Hsee, and Mayer (2000), Emotional intelligence and the self-regulation of affect (p. 186). In W. G. Parrott (Ed.), *Emotions in social psychology* (pp.185-197). Philadelphia, PA: Psychology Press.

Goleman (1995) believes that there is a direct correlation between emotional aptitude and intelligence (IQ) regarding success in life. Individuals who have well-developed emotional skills tend to be happier, well adjusted, and productive whereas individuals who have poorly

developed emotional skills tend to sabotage their decisions and remain in a state of discontentment.

This can be seen in the classroom. Participants that are eager to learn, turn in their assignments, participate in class, and portray a positive aura generally learn more and can better apply the concepts taught to other situations. On the other hand, participants that are always late to class, constantly give excuses for incomplete work, and complain that assignments are too difficult are unconsciously setting themselves up to fail.

## **Brain Anatomy and Structure**

This section provides a basic knowledge of the brain's anatomy and structure to help the reader understand the role emotion plays in learning. During the twentieth century (especially from 1990 – 2000), significant research was conducted to discover how the brain learned (Jensen, 2000; Wolfe, 2001). Understanding how the brain works and the behaviors and functions associated with it can provide vital insight on human behavior.

There are three primary levels within the brain: the thalamus, the limbic system, and the cerebral cortex. Each plays a key role in the learning process. The thalamus is located near the brainstem. It acts as a central relay station for sensory information that comes into the brain. In 1937, Papez proposed that information entering the thalamus was split three ways, into a stream of thought, a stream of motion, and a stream of feeling. Information from the stream of feeling was sent around the Papez loop, which involved the hypothalamus, anterior thalamus, cingulate cortex, association cortex, and hippocampus. According to Papez, when information moved around the loop, it was tagged with certain emotions that were later stored as memories. Recollection of these memories, either conscious or unconscious, is often seen in adult learners' behavior in the classroom. For example, some participants are excited about learning while others dread it. Many of these feelings may be linked to learning experiences they had as children (Cornelius, 1996; Jensen 1997, 2000).

Scientists such as Paul MacLean and Roger Sperry researched how the brain processed information. MacLean introduced the triune brain theory. This theory states that the brain has three distinct levels: the reptilian brain, the limbic brain, and the neocortex. The first level, the *reptilian brain* is the smallest and is primarily concerned with fundamental human needs such as breathing, digestion, circulation, self-preservation, social dominance, and sexual desires. The *amygdala*, located in the center of the brain serves as the “psychological sentinel of the brain because it plays a major role in the control of emotion” and is responsible for the fight or flight response (Wolfe, 2001, p. 27). Research shows that the amygdala creates unconscious memories often based on a fear response (LeDoux, 1996). Reactions from this level of the brain are automatic, basic, and ritualistic (LaFreniere, 2000; MacLean, 1973; Maresh & Blair, 2001).

The second level of the brain is the *limbic (or paleomammalian) brain*, which houses bodily reflexes, immune and hormonal systems, and metabolism. The limbic brain also manages emotions. It acts as a switchboard linking internal and external experiences. Because humans receive millions of sensory impressions every minute, important messages must be filtered out in order to survive. The limbic brain acts as a filter and serves as a mediator between the reptilian brain and the third level, the neocortex. At this level, conscious, short-term memory is created and stored in the hippocampus (Wolfe, 2001). MacLean believes that emotion must be closely associated with an event in order to make it memorable. Therefore, to increase memory, the

context must be emotionally charged (LaFreniere, 2000; MacLean, 1973; Maresh & Blair, 2001; McGaugh, 1989).

The third level, the neocortex, constitutes five-sixths of the total gray matter mass and contains approximately 78 percent of the brain's approximated 100 billion neurons. It stores long-term memory and controls high level thought processes such as logic, creative thought, language processing, and the integration of sensory information. Information stored in the neocortex receives signals picked up by the eyes, ears, and other senses. It is also responsible for body sensation, conscious behavior, hearing, intentional motor control, and vision such as pattern recognition, compassion, and high-level physical and mental coordination. Unlike other mammals, the human neocortex can analyze a situation, plan and sequence a series of events, learn from its mistakes, and think about concepts abstractly (LaFreniere, 2000; MacLean, 1973; Maresh & Blair, 2001; Wolfe, 2001).

Cognitive learning occurs in the neocortex and involves fitting new pieces of information (such as words and ideas) into existing frameworks. Social and emotional learning, on the other hand, transpire primarily in the amygdala and involve modifying existing emotional circuits through repetition and vivid experiences. Since emotional learning often requires changing the way one thinks and acts, more motivation for change is required to accomplish the set goals. Preconceptions and misunderstandings of social or cultural contexts often get in the way of learning new emotional competencies (Cherniss & Adler, 2000).

### **Physiological States, Behavior, and Motivation**

Brain research suggests that relevance, emotion, and context/pattern are critical for learners to construct meaning. *Relevance* refers to information that relates to something already known by the learner. Emotion triggers chemical reactions, which activate memory by marking the experience as important or meaningful. *Context* such as social, intellectual, physical, helps individuals identify *patterns*. The brain craves meaning and in the absence of identifiable patterns, the brain will manufacture its own meaning (Jensen, 1997, 2000).

Maguire (1990), states that learners must be in the appropriate physiological state in order to learn. "The best state for learning depends on the material and learning objectives; however, some desirable states for learning are: (1) curiosity, (2) anticipation, (3) suspense, (4) low-moderate anxiety, (5) high challenge, (6) low-moderate stress, and (7) temporary confusion" (Jensen, 1997, p. 39). By consistently engaging the different states during instruction, learning should increase. From a facilitation standpoint, instructors need to change the state of the learner by changing locations or activities regularly. Changing the environment by playing music or dimming the lights or changing the presentation mode by showing a video or incorporating a computer simulation may also prompt a change in a learner's physiological state. Additional strategies to alter the physiological state of learners include inviting a guest speaker, facilitating deep breathing exercises, creating ground rules, or asking for student input. Physical activity is also an effective way to change an individual's physiological state because it increases their heart rate and the amount of oxygen circulating in the brain (Jensen, 1997, 2000; Kagan, 1994; Wolfe, 2001).

Psychologists have identified numerous constructs such as attitudes, self-efficacy, values, self-concept, and interest, which reflect affective characteristics. The next section will discuss how these constructs impact training and instructional design principles.

## *Attitudes*

The attitudes of learners play a major role in the effectiveness of training. However, there is much debate over the definition of attitude. Allport (1935) defined attitude as “a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual’s response to all objects and situations with which it is related” (p. 810; Gable & Wolf, 1993, p. 5).

By the 1970s, there were two schools of thought regarding attitudes. The first school, known as the unidimensionalists, believed that attitudes were only evaluative. Based on their theory, attitude was “the intensity of positive or negative affect for or against a psychological object. A psychological object is any symbol, person, phrase, slogan, or idea toward which people can differ as regards positive or negative effect” (Thurstone, 1946, p. 39; Gable & Wolf, 1993, p. 6). The second school, known as the component theorists, believed that attitudes were multidimensional; that “an attitude is composed of affective, cognitive, and behavioral components that correspond, respectively, to one’s evaluation of knowledge of, and predisposition to act toward the object of the attitude” (Wagner, 1969, p. 7; Gable & Wolf, 1993, p. 6). Based on this view, attitudes consist of cognitive (beliefs), affective (evaluation), and behavioral (action) components.

In training, attitudes are addressed frequently through assessment factors such as learning objectives and evaluations. Affective learning objectives attempt to change the attitude of a learner by stating things such as “Upon completion of this training, the learner should develop positive attitudes toward the new processing environment.” From the evaluation standpoint, participants complete course evaluations that measure their satisfaction or dissatisfaction about the material covered during the class. Other attitudinal factors measured in a corporate environment may include job satisfaction, perceptions of the organization climate, retention and turnover rates, and customer service. Individual’s attitudes and perceptions of the attitudes of others play a vital role in the success or failure of a company (Jensen, 2000).

*State-bound knowledge* associates how and where information is learned along with the content. This concept is similar to Frijda’s (2001) law of situational meaning which links certain emotions with specific events. For example, anger is often linked to confrontation and accusations. If an individual perceives a situation as being beneficial, then positive emotions generally surface. If the individual perceives that the situation may cause some type of threat, negative emotions surface. Individuals’ emotion will change based on their experience, insight, and personal biases.

Magda Arnold, considered one of the leaders of the modern cognitive approach, believed that emotion was a process resulting from the completion of a sequence of events that begin with a stimulus where the perception of the stimulus is immediate. At the center of every emotion response is a judgment (appraisal) that identifies the action as positive or negative. Consequently, individuals sequence their thoughts about an emotional event in a Perception-Appraisal-Emotion format, with the perception coming from experiences. Appraisals are judgments about the meaning of an event and our relationship with it rather than in-depth, intellectual judgments. Emotion cannot be aroused if the individual does not feel an immediate or personal association with the event. Behavioral responses only occur when the emotional response is activated. An individual’s memory of experiences plays a large role in determining what the emotional response will be. This new experience, however, may lead to bias responses

because of the memory's perception of the original experience (Cornelius, 1996; LaFreniere, 2000).

The perception-appraisal-emotion format can be linked to how individuals react toward different learning opportunities and environments. Perception begins even before the individual comes to class, starting with the course description, comments from other learners, and support (or lack of support) from management. Appraisal includes the value the individual places on the subject matter, how it will affect current work habits, and the impression formed of the instructor (knowledgeable or incompetent). Emotion may occur if past memories or experiences with similar training sessions surface.

In training, facilitators frequently see responses based on the learner's experience. For example, individuals who are required to attend customer service training often become angry because they feel they are being accused of not having good interpersonal skills. As a result, individuals respond by stating they do not want to go to the class because they believe it will be a waste of time (Krathwohl, Bloom, & Masia, 1956). Often, these same individuals have attended other classes similar in nature and have not gleaned anything from them. Their experience has created a personal bias against customer service training. In order to engage these learners, facilitators must design the class in a way that disproves their personal biases and provides new experiences that evoke emotion. To do this, the individual must be able to share prior experiences, engage in problem-solving activities, role-play scenarios, and develop both creative and practical solutions to manage situations they may encounter in the future thereby helping the students value the experience more (Jensen, 1997, 2000; Krathwohl, Bloom, & Masia, 1956; Maguire, 1990; Sprenger, 1999; Wolfe, 2000).

Understanding the feelings associated with the learning process can help instructional designers and trainers create more effective and inviting learning environment. Since individuals make judgments based on the impact they believe it will have on their personal well-being, it is important that facilitators and instructional designers understand the individual's goals, expectations, and intentions of the students. According to Stewart and Healy (1984), studies have shown that emotions tend to follow specific patterns. The patterns begin with receptivity where individuals display hope for the future despite feeling confused and anxious about the changes occurring. Individuals then enter a stage of autonomy where adaptation to the new environment begins despite lingering feelings of inadequacy. During the assertion phase, individuals feel more comfortable and confident. They are no longer afraid to express feelings of concern or anger. Finally, individuals enter the integration phase where they are comfortable with the new environment and their role in it.

Individuals who attend training frequently exhibit the aforementioned pattern. Take, for example, training on a new software package. During the class introduction, the instructor demonstrates basic features and functions of the software. Then, to entice the learners, she shows them some of the extras that are available. Although the students are anxious during this part of the presentation, they begin daydreaming about all of the neat things they will be able to do in the future. For the next hour, the participants watch the instructor demonstrate basic concepts. Then, the instructor encourages the students to practice the procedures. Soon, individuals start to feel autonomy with the new software. After several hours of practice in the class, the participants feel comfortable with the new software, want to learn new things, and realize that some of the functionality available on the old system is no longer available. As a result, the participants may begin to complain. Finally, the participants go back to their jobs where they begin to use the new

software immediately. By integrating what they have learned into their daily routines, they become comfortable with the new software.

### ***Values***

*Values* are defined as “an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence” (Rokeach, 1973, p. 5; Gable & Wolf, 1993, p. 19). Unlike attitudes, which refer to several beliefs organized around a specific topic, values refer to a simple belief of a very specific kind. Values also usually revolve around social acceptance.

Most corporations have a set of values that everyone is to aspire to such as integrity, quality, leadership, and civic and community involvement. Commitment to these values from the employees has been shown to lead to overall organization effectiveness. Part of training’s role is to ensure allegiance to the corporate values and to develop training that shapes similar mental models.

### ***Behavior***

There are two dimensions of behavior – direction and intensity. *Direction* is how individuals select their response to situational stimuli, experience, and present goals. *Behavior*, largely based on goals, uses experience from habits, interests, and attitudes to formulate a cognitive plan. The intensity of behavior is based on the arousal the individual receives from the stimuli resulting in motivation to behave one way or another (Izard, Wehmer, Livsey, & Jennings, 1965).

To create an environment that fosters understanding, individuals must identify the causal relationship between learning and emotion. Anderson (1998) wrote that human characteristics such as thinking, acting, and feeling, reflect typical reactions to situations. While thinking and acting are cognitive behaviors, feeling is an affective behavior. Anderson (1998) believed that direction and intensity are attributes for the affective domain (Gable & Wolf, 1993).

From a training and instructional design perspective, the concept of direction and intensity plays a critical role in the individual’s willingness to participate and learn. Previous learning experiences, as well as support from management, will directly influence the learner’s involvement. Trainers should ask participants what their learning needs, goals, and interests are. They also need to be flexible enough to rearrange information to ensure the participant remains involved in the learning process.

### ***Fear***

The autonomic and central nervous systems play a vital role in human emotions. Understanding human emotion allows researchers to better calculate reactions that individuals experience because of emotional stimuli. Frijda (2001) states, every emotion is linked to a concern (the thing that gives the event or emotion meaning). For example, many newly matriculated adult learners who have been out of school for a period of time experience significant levels of anxiety and fear. Questions of doubt and inadequacy are prevalent as well as nervousness to answer questions or fear to present in front of a group. Many of the emotions may be directly associated with prior negative educational experiences (i.e., remembering a teacher

reprimanding students for giving the wrong answer or being called on unexpectedly to answer a tough question).

Since adults are more sensitive to peer pressure than children are, it is extremely important that instructors avoid placing their participants in embarrassing situations (Knowles, 1990). Training should be designed in a way that alleviates these fears so the individuals can receive the information they need (Krathwohl, Bloom, & Masia, 1956). Often when students experience physical symptoms (such as sweating, dizziness, discoloration of the skin, shakiness, and a rapid heart rate) or feel threatened, the learning experience is compromised. Instructors can get the student's attention by "offering ways for learners to avoid embarrassment, hurt, anxiety or ridicule" by making "plenty of time for understanding, processing, elaboration, and verification" during the class period (Jensen, 1997, p. 29). Working in pairs or small groups, encouraging questions, praising participation, and guiding learners through the learning process are all ways to do this.

When dealing with great fears, modeling behavior and participation can also help individuals reduce their fears. The concept of modeling can be applied to a supervisor seeking to encourage employee development. If the supervisor embraces the concept of continuous learning and job improvement, the employee is more apt to do the same. If however, the supervisor refuses to keep up with current trends and does not promote training for his staff, the employees will most likely not see the value in learning either. Sharing or hoarding information is another behavior that is often modeled. Modeling is a true example of characterization by value (Frijda, 2001; Goleman, 1995; Krathwohl, Bloom, & Masia, 1956).

### *Happiness*

Research has found that happy individuals tend to use more creative and inductive reasoning skills (Jensen, 1997; Wolfe, 2001). They have more confidence in their ability to solve the problem and thus will persist until an acceptable solution is found. Happy individuals find it easier to categorize and organize the different components associated with the problem. They also have a tendency to help others more because they find the altruistic behavior fosters a more pleasant environment. On the other hand, sad individuals tend to use reasoning that is more deductive and consider multiple options. When fear or guilt are involved, individuals may become more focused and make analytical decisions (Goleman, D. 1995; Martin, & Clore, 2001; Salovey, Hsee, & Mayer, 2001).

Results show that individuals appear to be happier when either a positive outcome increases rapidly (increased value of home) or a negative outcome decreases slowly (falling stock prices) rather than the reverse. Similar studies showed that individuals also preferred to see visible gains to a shorter period of time as well as long-term positive results especially when dealing with investments (Salovey, Hsee, & Mayer, 2001).

The mood of the trainer also plays a vital role in how well the information is received (Jensen, 1997). If the instruction is delivered positively, energetically, and confidently then participants will be more accepting and comfortable with the material. On the other hand, if the instruction is delivered negatively, lethargically, and the instructor is hesitant or uncertain about the material, then the participants will not feel comfortable with the accuracy or value of the information (Jensen, 2000).

Based on Frijda's (2001) law of hedonic asymmetry, individuals are happiest after a major change (such as winning the lottery) rather than after they have become comfortable with

the new norm. This association can also be seen with learning and training. When individuals learn something new or attend interesting classes, they tend to value it, are often very upbeat, and want to share the information with others (Krathwohl, Bloom, & Masia, 1956). However, as time passes, the information learned is cataloged with hundreds of other pieces of information and sharing it with others becomes less important.

Optimal learning occurs when students are intrinsically motivated (high challenge), relaxed (low stress), and are focused on learning (immersed flow state) (Caine & Caine, 1990; Csikszentmihalyi, 1990; Jensen, 1997; Kenyon, 1994). Csikszentmihalyi (1990) states that optimal learning requires a state of flow “a pattern of activity in which individual or group goals emerge naturally as a result of pleasurable activity and interaction with the environment” (Jensen, 1997, p. 43) and where skill level and challenge are equal. Once individuals achieve a state of flow, they often lose track of time and become engrossed in the activity.

From a learning perspective, participants want class time to be productive and relevant to their needs (Knowles, 1990). When this occurs, they return to their jobs wanting to share the information, which reinforces what they learned. Positive outcomes of this experience can include reduced time spent on a task, praise from a boss, or recognition from a customer for improved services. This positive reinforcement encourages the participant to continue applying the knowledge gleaned in the class and adapts it to a daily routine, which ultimately improves their performance.

### ***Motivation***

Understanding emotion is the key to motivation (Frijda, 2001; Jensen, 1995). *Motivation* occurs when individuals seek to fulfill basic needs such as hunger, thirst, social contact, and sexual desires almost automatically without a lot of conscious consideration. Although basic level motivation is similar regardless of culture, high-level motivators vary depending on a multitude of individual factors. *Motive* according to McClelland is defined as the arousal of any part of a stimulus that originally influenced an emotion (Izard, Wehmer, Livsey, & Jennings, 1965).

Motivation to learn can be extrinsic (reward oriented) or intrinsic (goal oriented). Many successful individuals are motivated by the desire to meet their high achievement and self-actualization needs. Malone (1981) believes that intrinsic motivation is created when challenge, fantasy, and curiosity exist. Therefore, activities to motivate intrinsic learners should incorporate a wide range of challenges, provide concrete feedback, and have clear-cut criteria regarding performance. Keller (1983) believes that motivation is based around generating interest, showing relevance, creating an environment where success is expected, and building satisfaction through intrinsic and extrinsic rewards.

### ***Self-efficacy***

Bandura (1986) defines *self-efficacy* as “people’s judgments of their capabilities to arrange and execute courses of action required to attain designated types of performance” (p. 391). In other words, individuals who believe they will be successful generally are. In fact, according to a study of 112 entry-level accountants, self-efficacy was a stronger predictor of performance than actual skill-level (Gable & Wolf, 1993). Other studies have shown that self-confidence was directly linked to superior performance. Trainers and managers can encourage

learning by linking intrinsic and extrinsic rewards with attempting unfamiliar tasks or taking risks. Refraining from labeling or classifying employees can also help to limit bias and enhance self-efficacy. Effective results from training often are based on self-efficacy. When an individual's perception of his abilities is accurate, success is generally higher because the individual believes he is able to accomplish the task (Cherniss & Adler, 2000; Howard, 2000).

Self-efficacy is developed through physiological cues, verbal persuasion, and real or vicarious experience. In a corporate training environment, creating and distributing a 360-degree feedback questionnaire that uses Likert scales to determine frequency, agreement, or satisfaction of performance is one way to measure self-efficacy. However, it is important to remember that adults have pride and will be vulnerable and uncomfortable trying out new behaviors. Bandura (1986) proposes the most effective approach to demonstrating desired behavior includes modeling, guided enactment (role-playing or coaching), and self-directed application or practice. Guided skills practice is another way to increase self-efficacy and personal competence. Videotaping the demonstrations, role-plays, and practices can also provide a valuable form of feedback for negative behaviors while reinforcing positive ones (Gable & Wolf, 1993; Sprenger, 1999).

Perceptions of self-concept (an individual's self-perception) are based on experience with the environment and the influence of others. From a learning perspective, individuals begin developing their self-concept early on in school. This concept remains with individuals throughout their lifetimes and is molded continuously based on input from new influences encountered including teachers, bosses, and family members.

For the most part, individuals use attitudes to describe their feelings toward someone or something; self-efficacy to determine one's capabilities through self-appraisal; values to reflect one's belief system; self-concept to view the current perception of oneself; and interests to identify personal preferences. Based on the direction, intensity, and target of these attributes researchers can determine the basic behaviors individuals may present in different situations (Gable & Wolf, 1993; LaFreniere, 2000).

Very few people remember something the first time they are exposed to it. For that reason, teachers and facilitators generally practice the rule of three: (1) Tell the participants what you are going to say, (2) Tell them, and (3) Then tell them what you told them. Bandler (1998), co-discoverer of neurolinguistic programming, states that the brain has three criteria, referred to as "self-convincers," that it needs in order to verify or believe information it receives. These criteria require individuals to reinforce learning through: (1) a preferred modality – visual, auditory, or kinesthetic, (2) repetition, and (3) for a specific amount of time "Self-convincers" can serve as self-fulfilling prophecies for learners. Gifted-learners generally have high self-confidence and require minimal reinforcement. Slow, discouraged, or "at-risk" learners on the other hand, have low self-confidence and require convincing and constant support. The basis of self-convincers is that learner must know what in order to learn. This knowledge leads to self-confidence and motivation to learn more (Jensen, 1997; Wolfe, 2001).

Frijda's (2001) law of apparent reality states that if individuals believe something to be real or true, they will create an emotional attachment to it. According to Sternberg (1996), individuals generally try to do well, to meet the expectations of their parents, teachers, or employers. This ownership creates an emotional link to the work that one does. This self-fulfilling prophecy is observed when learning is involved as well. If individuals believe that others perceive them as intelligent, they strive to maintain that status. However, if individuals feel that the action or event occurring has no direct impact on them, little to no emotion will be

expended. An example of this would be an individual refusing to learn new skills because he does not believe that increased knowledge will improve his standing within the company (Krathwohl, Bloom, & Masia, 1956).

### ***Interest***

Another aspect of motivation is interest. *Interests*, highlight key subject areas in which the individual desires to increase his knowledge base. From an organizational and educational standpoint, interests are measured primarily in terms of vocational or occupational preferences. In a training environment, this might involve asking the participant to complete an interest inventory followed by a discussion about additional learning opportunities around the selected area of interest. Jensen (1997) encourages instructors to “take advantage of the brain’s quest for novelty by eliciting states of curiosity, oddity-interest, suspense, awe, confusion, surprise, and the ah-ha! [Instructors should also] take advantage of the brain’s hunt for pleasure by creating states of anticipation, hope, security, fun, self-confidence, acceptance, success, and satisfaction” (p. 29). This approach helps fulfill the adult learner needs to know what’s in it for me? (WIIFM) (Knowles, 1990).

Facilitators and designers can motivate adults by appealing to their desire for personal growth or gain. Since adults are more self-centered when it comes to learning, they may be motivated if they see their job-skills training as maintaining or increasing their sense of self-esteem or pleasure. For example, job training can be linked to the satisfaction of receiving an outstanding rating on an audit. Novelty also allows for differences in style, time, place, and pace of learning (Jensen, 1997). Individual differences among people increase with age. Bloom (1956) proposed that instructional time and materials must vary in order for individuals to master specific learning tasks. He believed that learning should be self-paced and sequenced based on individual learning preferences. Facilitators must assure high-risk participants that they will not be left behind, while taking care not to bore the accomplished performers (Knowles, 1990).

### **Applied Learning**

Adults tend to prefer single-concept, single-theory courses that focus on applying the concept to relevant problems. Likewise, if adults acquire a new skill but have no opportunity to practice it, their use of the skill will quickly fade. Adults learn through logical problem solving and expect immediate application (Knowles, 1990). To demonstrate this theory, a group of adult learners was told they needed to give a five-minute presentation to their departments next week. Many in the group panicked because they had never given a presentation before. To alleviate the groups fear, the training department created a lesson plan that identified the key elements to incorporated in a good presentation. The lesson’s content was relevant to the participants because they had to develop and present a five-minute presentation. The visual aid of a dinosaur created novelty as well as familiarity. Trainers created an atmosphere of success by providing the information about what was expected and encouraging the participants to start working on their presentations immediately. The participants gained satisfaction when the presentations were finished successfully.

Adult learning is life-centered and based on what they already know; building on life experiences. Therefore, the most teachable moments are those points in their lives when they believe they need to learn something new or different. These moments can occur, for instance,

because of real-life events, such as taking a new job, losing a job, or receiving a promotion (Knowles, 1990).

### ***Preference***

Honoring individual preferences, beliefs, and contributions is essential in order to keep the attention and respect of adult learners. Salovey, Hsee, and Mayer (2001), state that individuals have a tendency to arrange events based on three preferences (1) impatience, (2) savoring, and (3) velocity. *Impatience* shows an individual's desire for instant gratification. Under this premise, individuals' fear that waiting for the result will lessen the pleasure associated with it. *Savoring* on the other hand demonstrates an individual's willingness to wait until the last minute. The anticipation is the aphrodisiac that influences the decision. Finally, *velocity* refers to an individual's preference to have the situation improve quickly or decrease slowly based on the original state.

Adults have a deep need to be self-directed and cannot be forced to learn. The more that adults are involved in a discussion, the more learning that takes place. The old school of instruction involved a teacher controlling the class (children raising their hands before speaking). One-way communication does not work in an adult-learning environment. If adults are told, how it is without asking their input, they will most likely tune out. The best learning environment is one in which a facilitator asks for participant involvement and input (Knowles, 1990).

Instructional designers and trainers should encourage learners to use multiple senses and teach to the different learning preferences (visual, auditory, and kinesthetic) (Jensen, 1997; Kagan, 1994; Wolfe, 2001). Common misconceptions of these preferred learning styles might be thinking that doodling on a note pad or playing with a koosh ball means that the learner is ignoring the instructor. Instead, kinesthetic learner uses these techniques to remember information more effectively. Another example would be the individuals who sit in class, apparently day dreaming, taking little if any notes. Quite possibly this is an auditory learner who could repeat any information presented with great accuracy.

Along those same lines, learning improves when individuals are able to read it, hear it, touch it, and teach it. By addressing the senses and learning preferences (visual, auditory, and kinesthetic), transference and retention of information can greatly increase (Jensen, 1997; Wolfe, 2001). According to Rief (1993), students that participate in multisensory instruction retain more based on the learning method used:

- 10% retention of what they read
- 26% retention of what they hear
- 30% retention of what they see
- 50% retention of what they see and hear
- 70% retention of what they say
- 90% retention of what they say and do

Chunking is another key concept that assists in the learning process. Individuals learn best when information is presented in small, manageable units. By chunking information, the learner's comprehension, access, and retrieval speed is increased. Since no more than five to nine pieces of information can be stored in short-term memory at one time, creating units consisting of  $7 \pm 2$  pieces of information is most effective. For example, if students are trying to learn a series of 20 numbers rather than having them memorize 1, 4, 9, 2, 1, 7, 7, 6, 1, 8, 2, 0, 1, 9, 1, 0, 2, 0, 0, 2; ask them to remember the numbers in the context of years 1492, 1776, 1820,

1910, and 2002. Now instead of having to remember 20 numbers, the participants only need to learn five.

### *Change*

“Emotions are elicited not so much by the presence of favorable or unfavorable conditions but by actual or expected changes in favorable or unfavorable conditions” (Frijda, 2001, p. 62). The law of change states the greater the change individuals experience, the greater the emotional reaction will be. In business, change often requires retraining employees. A common emotion linked to change is fear of the unknown. Instructional designers can help alleviate this fear by providing training material that addresses this concern. For example, information should incorporate new values and goals, expectations, process flows, procedures, terminology, and impacts. When individuals are provided with all the information they need they tend to respond better to the change (Krathwohl, Bloom, & Masia, 1956).

Change often requires retraining individuals. Too often, the emotional state of the trainees is not considered. Recognizing this fact, this researcher recently developed a course on change management in which a concerted effort was made to identify and discuss some of the possible reactions individuals may experience when they encounter a large-scale change. After discussing the phases of change (the change, the unknown, the adjustment, and the new norm) with the class, they identified common reactions individuals experience when trying to cope with change. Participants were asked to think about a major change they had gone through in the past and list some of the physical reactions they experienced during that time. The class repeated the process looking at emotional, psychological, and behavioral reactions. The facilitator’s role was to ensure that everyone felt comfortable with and could identify common symptoms associated with the different phases of change. Unexpectedly, this researcher received many angry phone calls about this section of the course. Managers and facilitators did not want their employees to review this information. They believed that this would make the employees even more resistant to the change. Although this researcher empathized with managers’ concerns, she remained resolute to keep the information in the program. After presenting the information to staff members several weeks later, a different reaction occurred. Instead of resisting the change more, staff members commented that they appreciated knowing that the feelings they were experiencing such as headaches, fatigue, anxiety, apprehension, fear, denial, memory problems, restlessness, and withdraw were normal symptoms commonly associated with change.

The reaction of the managers and staff members is related to the law of comparative feelings. It demonstrates that every individual handles emotions differently based on their locus of control, achievement motivation, and other extenuating factors. Stress is a good example of this law because generally, the more in control individuals feel, the less emotionally stressed they will be. Individuals are more motivated when training material provides accurate, timely information that is understandable and relative to the new environment. When it is, they can create their own links and action plans for learning and incorporating the new information into their daily routines (characterization by value) (Krathwohl, Bloom, & Masia, 1956).

Consequently, influxes of courses on cultural diversity, managing change, listening, customer service, and neuro-linguistic programming have become increasingly popular. Unfortunately, many of these classes fail to engage the learner. As a result, very few students incorporate the new concepts learned into their daily routine consistently as identified by Bloom’s affective domain level, characterization by value.

“Continued pleasures wear off; continued hardships lose their poignancy” (Frijda, 2001, p. 62). Connected with the law of change is the law of habituation, here individuals become conditioned to react a certain way to stimuli. As a result, the emotional effects diminish over time such as the feelings of anger, sadness, and despair associated with the loss of a loved one. “When a change event occurs, the need for some adaptation produces, for some adults at least, a heightened readiness to engage in educative activity. The resulting activity may be directly or indirectly related to the change event, and the relation may or may not be recognized by the individual” (Knox, 1977, as quoted in Merriam and Caffarella, 1991, p. 108). As individuals learn more about the new way of doing things through training, the grieving process over the old procedure wanes. Eventually, individuals will begin to respond by accepting the new way of doing things and their initial fears subside (Krauthwohl, Bloom, & Masia, 1956).

It is during these transitions that the adult learner makes a conscious decision to gain knowledge of and become skilled at new information in order to move from one stage to another. Encouraging mentoring relationships can positively impact the comfort and acceptance level of the change.

Change creates transitions which are viewed as “the natural process of disorientation and reorientation that marks the turning points of the path of growth . . . involving periodic accelerations and transformations” (Bridges, 1980, as quoted in Merriam and Caffarella, 1991, p. 108). Seven stages associated with transitions include:

(1) Immobilization – a sense of being overwhelmed or frozen; (2) Reaction – a sharp swing of mood from elation to despair depending on the nature of the transition; (3) Minimization – minimizing one’s feelings and the anticipated impact of events; (4) Letting go – breaking with the past; (5) Testing – exploration of new terrain; (6) Searching for meaning – conscious striving to learn from the experience; and (7) Integration – feeling at home with the change (Merriam and Caffarella, 1991, p. 109).

According to Gable & Wolf (2000), there are four basic phases that need to be addressed when developing emotional learning “secure organizational support; prepare for change; train and develop; and, encourage, maintain, and evaluate change” (p. 64). From a training and development standpoint there are several steps which must be taken including “fostering a positive relationship between the trainer and the learner, . . . using ‘live’ models, . . . relying on experiential methods, . . . providing practice and feedback, and . . . inoculating against setbacks” (Gable & Wolf, 2000, p. 111).

To build a positive relationship with students, the facilitator must exhibit empathy, trust, and confidentiality. Without one of these three factors, participants will most likely shy away from developing a relationship with the facilitator. Sharing personal examples and experiences is one way to show empathy and build trust. Talking off-line with a participant when a problem exists rather than in front of the whole class can also build trust and conveys to students that information will be kept confidential.

Involving participants through active learning techniques is another way to promote emotional learning and manage change. Role-plays, group discussions, demonstrations, skill practices, simulations, games, and art projects are just a few ways to get students more involved. Since the amygdala does not understand words, these exercises provide the repetition and activity needed to create an emotional imprint (Jensen, 1997; Sprenger, 1999; Wolfe, 2001).

Hands-on practice is a key element required to ensure emotional learning. According to Cherniss and Adler (2000), psychological studies have shown that old, ineffective neural

connections will weaken or disappear when they are not used regularly. Practice over time strengthens these connections. In fact, when emotional learning is desired, information and practice should be repeated multiple times before old habits can be replaced with new ones. Some of the most effective classes actually require follow-up by attending additional courses and performing the newly learned skills on the job for an extended period.

Feedback is important because it keeps the learner on track. When done properly, it is also a form of motivation. It can help the learner recognize that when learning new information, there will be minor setbacks simply because the process or concept is unfamiliar. As a result, it may require additional work on the part of the learner before it is mastered. By letting the learners know ahead of time that there will be minor slips where they revert back to their old habits, they will be less apt to become depressed and more likely to adopt a strategy for forging ahead (Cherniss & Adler, 2000).

Unfortunately, most of these techniques will fail if there is not a supportive, encouraging environment in which learners can practice and experiment. Both managers and peers need to understand, value, and support the fact that learned change does not occur over night. Managers that encourage training help employees identify personal and developmental goals. Follow-up with the learners after training is more apt to show a return on investment because the learners are more motivated and take ownership of their actions (Baldwin, Magjuka, & Loher, 1991).

### **Summary**

This paper has shown that emotion is a more powerful influence on learning than cognition is. It has done so by defining concepts such as emotion, intelligence, emotional intelligence, attitude, self-efficacy, self-concept, values, and interests and has identified and related the laws of emotion to instructional design, training, and the affective domain.

Information surrounding how to promote learning in the affective domain was provided to demonstrate how simple activities could grow into effective training methods. Examples were provided to demonstrate the ease in which emotional learning concepts can be incorporated into training as well as make the reader more aware of affective techniques they may already be using.

Creating affective learning objectives, establishing rapport and trust with the learner, encouraging experiential learning opportunities, and understanding the reasons behind how emotions influence behavior and learning are just a few concepts explored. Mind shifts from the automatic design and training response are needed in order to provide learners with emotionally charged material. Once this is achieved, the learner must be willing to receive, respond, value, organize, and characterize by value the concepts presented.

Although both cognition and affect play a role in learning, the variability of affect appears to embrace more aspects of the process over all. Not only are there specific emotions, but the level at which one experiences the emotion can vary greatly. In contrast, cognition is very specific and limited in its scope. One's affective state is housed in long-term memory and is slowly but constantly changing as the mind receives, responds, values, organizes, and characterizes information by value. Yet, one's cognitive structures flashes information rapidly in short-term memory, soon to disappear forever if not associated with emotional stimuli causing the cognitive dimensions of knowledge, comprehension, application, analysis, synthesis, and evaluation to be created.

Research has shown that affective reactions are primary, basic, and inescapable; affective judgments tend to be irrevocable and implicate the self; and, affective reactions are difficult to verbalize, not dependent upon cognition, and may become separated from content. Because of its vast nature, a wider range of teachable moments may be incorporated into learning if emotional connections can be made (Cornelius, 1996).

Based on the information shared about emotional intelligence and affective characteristics such as attitude, self-efficacy, value, self-concept, and interests, individuals who are focus on developing skills associated with the affective domain will be happier and more successful. As Sternberg (1996) stated, successfully intelligent people defy negative expectations; are self-efficacious; actively seek out role models; capitalize on their intellectual strengths and compensate for and correct their weaknesses; distinguish them from ordinary performers; and, realize that the environment in which they find themselves may or may not enable them to make the most of their talents. Hopefully, this paper will encourage learners, trainers, and instructional designers to become more emotionally intelligent by embracing the philosophies and practices discussed.

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