

THE CONNECTIONS BETWEEN EMOTIONS AND LEARNING

By Candy Lawson, Ph.D.

WHAT ARE EMOTIONS?

Emotions are the feelings that colour our lives and allow us to experience all of the joys and sorrows of life. Never being able to feel the pleasure of eating a hot fudge sundae, the regret of making an unkind comment, the joy of seeing an old friend, the grief of losing a loved one or the awe of seeing the Grand Canyon would make our lives quite bland and meaningless. Dr. Paul Ekman, an expert in the field of emotion, has identified four core emotions that are universally experienced and recognized: fear, anger, sadness and enjoyment. Most researchers believe that there are many families or dimensions of these emotions that result from the myriad blends, variations and nuances that are possible. For example, sorrow, loneliness, grief, dejection and despair are associated with sadness while happiness, joy, delight, contentment and amusement are associated with enjoyment.

WHERE DO EMOTIONS COME FROM?

Emotions originate in the brain, specifically in the limbic system. The limbic system is a small structure located in the middle of the brain between the lower centre or brainstem and the higher centre or cortex. The brainstem controls alertness and arousal and sends sensory messages to the cortex via the limbic system. Much of our thinking and learning takes place in the cortex. Memory, an important component of learning, involves the limbic system.

The limbic system interprets and directs emotion and behaviour. Priscilla Vail, an expert on learning, has described emotion as the "on-off switch to learning". According to Mrs. Vail, when the switch is off, the system is dormant and only the potential for learning is available. When the switch is on, the pathway to learning is open. When the limbic system interprets sensory information and dispatches it to the cortex for processing, it sets the emotional tone of the information before it reaches the cortex. If the limbic system interprets the information as positive, it dispatches a message of purpose and excitement and directs our behaviour toward a goal. When this happens, we become motivated to act; thinking and learning are enhanced. When the interpretation is negative, the switch is turned off and thinking and learning are stifled. The system's interpretation of sensory information is based on the person's memories and immediate reaction to a current event. The more positive the learner's memories and reaction to the event (emotional state), the better the learning will be. Research has shown that happiness has a positive effect on learning, memory and social behaviour. Conversely, negative emotional states, such as anger and sadness, have been shown to have a negative impact on learning and motivation.

Because the limbic system is the mediator between thought and feeling, it is easy to see why emotion is so crucial to making good decisions and thinking clearly. Emotions can disrupt thinking and learning. When we are happy we have a "clear mind" but when we are upset we can't "think straight". Positive emotions such as joy, contentment, acceptance, trust and satisfaction can enhance learning. Conversely, prolonged emotional distress can cripple our ability to learn. We all know how hard it is to learn or remember something when we are anxious, angry or depressed.

HOW ARE EMOTIONS FORMED?

Emotions arise from memories and reactions to current events. Our emotions are formed by how we think about past and present experiences. We all try to explain our own behaviour and that of others. The ways that we attempt to explain the causes of behaviour are called "attributions". Dr. Martin Seligman refers to this as our "explanatory style". According to Dr. Seligman, it's not what happens to us but what we think about what happens to us that counts. Our thoughts and beliefs

are our reality. For example, when a father gets angry at his son, the child might think that he did something to anger his father, that his father is just a grouchy person or that his father had a hard day at work. The first explanation may cause the child to blame himself for his father's anger. The second attributes his father's anger to his father's personality. The third explanation sees the anger as his father's reaction to a situation. The boy will react quite differently to each of these attributions. Our explanatory style is part of our personality, develops in childhood and, without intervention, is lifelong.

According to Dr. Seligman, there are three dimensions that we typically use to explain why a good or bad event happens: pervasiveness, permanence and personalization. Our attributions can be global or specific, permanent or temporary and internal or external. If a child attributes a failing grade on a math test to the fact that he is not smart, he is making a global, permanent and internal statement about his ability. As a result, he will come to believe that his lack of intelligence will affect his test scores on all tests in all subjects forever and there is nothing he can do to change it. If he attributes his poor test score to the fact that the test was really hard, he is explaining his score by specific, temporary and external factors, which can be changed and controlled. He could study harder or in a different way for the next test and receive a better grade.

An explanatory style that is global, permanent and external can, when negative events occur, lead to feelings of helplessness and hopelessness (pessimism). Pessimists see a glass half full of water as "half empty" while optimists see it "half full". The amount of water in the glass is the same; it is how we think about it that makes our experience of it positive or negative. Optimism or positive thinking lies in the way we think about the cause of things that happen. An explanatory style that is global, permanent and internal can, when good things happen, lead to feelings of self-confidence, self-esteem and contentment. Therefore, changing our attributions can change the way we feel. Because negative thoughts lead to negative emotions, we can feel better by thinking better, more positive thoughts. For example, if someone said something that hurt your feelings, you can't control the other person's words but you can control what you think about them and how you react to them. Our thoughts play an important role in how we learn to control our emotions and behaviour.

WHY ARE EMOTIONS IMPORTANT?

Motivation

Our thoughts and emotions can strongly affect motivation. Motivation is a drive or desire that compels us to do something. If we think we are a good singer, we will likely be motivated to become a member of our church choir. If we think we can't sing, we won't. Often students don't seem to be motivated in school. They don't want to do homework or schoolwork and believe that they have no control over their grades. They believe that they are dumb or stupid. Even though they put out effort, they are never successful and fail to achieve their goals. As a result, they begin to feel stressed out by school and start to feel helpless and hopeless. In this situation, their thoughts affected or caused their negative feelings. Other times students seem unmotivated because they are anxious or depressed. As a result, they have trouble concentrating in school and can't keep their mind on their work. They may think too much about personal problems and focus on the negative. In this situation, their emotions affected or caused their negative thoughts. In both situations, a lack of motivation prevents new learning; it "turns off the switch".

Emotional Intelligence

Dr. Daniel Goleman has written a book about "emotional intelligence". He distinguishes the ability to understand and manage our emotions from general intelligence or IQ. His concept of emotional intelligence helps us understand why people with high IQ's don't always do as well in life as those with more modest intellectual ability. Dr. Goleman has identified five qualities that comprise emotional intelligence: knowing our emotions (self-awareness), managing our emotions

(impulse control), motivating ourselves to achieve goals (persistence, zeal and self-motivation), recognizing emotions in others (empathy) and managing relationships with others (social skills). He sees these as the steps necessary to achieve high emotional intelligence. Because emotional intelligence is learned rather than inherited like general intelligence, it can be nurtured and strengthened. Therefore, parents and teacher's play an important role in sculpting a child's emotional intelligence, contentment and success in life. Deficits in emotional intelligence can create serious problems in our relationships and impact our physical health.

Emotions influence how we perceive and react to life, which in turn, determines how content and successful we are. We achieve emotional intelligence by attaining our goals and managing negative emotions. Unmanaged, negative emotions take control of life. It is impossible to manage our lives until we can manage our negative emotions.

Emotions are largely, but not entirely, controlled by our beliefs. Beliefs are really attributions, which arise from our memories and reactions to events. We can have rational or irrational beliefs. Rational beliefs are positive, constructive and adaptive. For example, if a child believes that he is smart, when it is time to take a math test, he believes that he will do well if he studies for the test. This belief was formed by memories of doing well on previous math tests when he studied. Positive thoughts like these increase his motivation to study and impel him toward his goal of passing the test. Rational beliefs help us to cope more effectively and gain contentment and enjoyment in life. Irrational beliefs are negative, self-defeating and maladaptive. Irrational beliefs lead to negative emotions like anxiety, anger and depression. For example, if the child taking the math test believes that he will fail the test because he is not smart, he may refuse to study for the test, "forget" that he has a test or become very anxious about the test. These behaviours will cause him to do poorly on the test and lead to feelings of anxiety, anger or depression. These irrational patterns of thinking are like bad habits. They are self-defeating and difficult to change.

Dr. Albert Ellis, a psychologist, has developed a method for changing the way we think, feel and behave, which he has termed "rational emotive therapy". Rational relates to the thinking, logical part of our brain while emotive relates to the emotional, feeling part of our brain. When we experience an activating event, which can be a current event, situation that we remember or a future event that is of concern to us, the event triggers our thinking and system of rational and irrational beliefs. Using self-talk to access our beliefs, we generate emotions and behaviours. Rational self-talk helps us manage our emotions and behaviour, while irrational self-talk prevents self-control.

WHAT HAPPENS WHEN WE CAN'T MANAGE NEGATIVE EMOTIONS?

Externalizing Behaviours

Some children (and adults) have trouble managing negative emotions. In children, emotional problems are usually manifested as behavioural problems. Some children tend to externalize or under control their emotions and behaviour. They may act out their negative thoughts and feelings by being impulsive or aggressive. Anger is the core emotion associated with externalizing behaviours.

Frustration often leads to anger. Frustration occurs when our wants, efforts and plans are blocked. We do not get what we want. Children who have a low tolerance for frustration believe that the world is "too hard" and they can't stand it. Children with learning differences are often easily frustrated because tasks, such as learning to read, are incredibly difficult for them. They try their best but don't succeed regardless of how hard they try. Children also respond with anger in situations that are perceived as threatening to their self-esteem. If a child is being picked on in school because he can't read, he might react with anger.

Children who are angry are often unable to correctly identify the source of their anger. Anger is not caused by an event; it is caused by the angry person's thoughts and reaction to that event.

Angry children might be disruptive in class, annoy and bully other children or get into fights. They might resent rules and refuse to follow them. They might also refuse to do homework or to do what their parents and teachers tell them to do. Sometimes they might even get suspended or expelled from school or get in trouble with the law. Often children who act in these ways are not very happy and wish that they could be different. Their behaviour problems only serve to make things worse. They feel bad about themselves and lack self-confidence and self-esteem.

Expressing anger does not mean getting rid of it. In fact, the more you express anger, the more likely you are to become angry in the future. It becomes another learned habit. Anger usually has a negative impact on relationships and does not lead to contentment and success. Replacing anger with assertiveness is more likely to achieve the desired goal.

Internalizing Behaviours

Other children who have trouble managing their emotions tend to over control or internalize their feelings. They may feel scared, unhappy, anxious or sad. They may be overly sensitive and get their feelings hurt easily. They might also withdraw from other people and spend a lot of time alone even though they don't like to be alone. They might have trouble concentrating and paying attention in school. These behaviours may lead to poor school performance, which can reinforce feelings of anxiety, sadness and low self-esteem.

Anxiety

Anxiety is one of the most commonly felt emotions. It has been referred to as the "common cold" of mental health. The core of anxiety is the emotion of fear. People who are anxious may be fearful of specific things such as heights, snakes, lightening, flying or dentists. In school, children may be fearful of tests. The only time the child becomes anxious is when the "target stimulus" is present. Other children become anxious only in social situations. They are extremely uncomfortable in situations where they feel they are being scrutinized or evaluated. They fear they will be humiliated or embarrassed.

Some children are more pervasively anxious and worry about general things. They feel that they are unable to control their worry. They may worry about how they did on a test, how they look, whether other people like them or what will happen in the future. Children who are generally anxious are apt to appear "keyed up" or "on edge". Then tend to feel irritable and tense. They may also have trouble sleeping and concentrating and tire easily. Sometimes children that are anxious try to deal with their anxiety by being a perfectionist. Of course, this is not possible and usually only makes them feel worse when they are not perfect.

Some anxious children may even obsess about certain things, such as cleanliness, safety, their health or being the best at everything they do. They cannot get these thoughts out of their minds even if they want to or try to. They may attempt to manage their anxiety and prevent feared events from happening by engaging in compulsive behaviours such as hand washing, checking, hoarding or superstitious behaviours. Behaviours such as repeatedly checking to see if a door is locked, being unable to throw anything away or having to repeat a ritual, such as touching a mirror seven times, over and over, can be signs of problems managing anxiety. Although these compulsions are used to reduce obsessive thoughts, they don't work because they too are out of the child's control.

Anxious children may also have panic attacks or episodes of intense fear or discomfort that are accompanied by physical symptoms such as palpitations, shortness of breath or trembling and a fear of going crazy or losing control. These attacks may be triggered by an external event (test, elevator, airplane, crowd) or may be unexpected and come out of the blue.

Depression

Depression is another internalizing problem that is related to the emotion of sadness. Children who are depressed feel sad and blue. They may also be irritable. They may lose interest or pleasure in activities that they previously enjoyed. They may have trouble sleeping or sleep too much. They may lose their appetite or eat more than usual. They are often agitated, tired and have difficulty thinking or concentrating. Depressed children may also feel worthless, hopeless, helpless, and guilty and have low self-esteem. They may even have thoughts of suicide. When a child speaks of suicide, even casually, parents/teachers/adults should never ignore or minimize the statement. Any suicidal thought should be taken seriously and requires prompt professional attention.

Some children attempt to keep their emotions under control but they come out anyway. Children who are anxious or sad may complain of physical problems such as headaches or stomach aches when it is time to go to school, take a test or do homework. Often a medical check up fails to find a physical reason for these complaints. Many children miss school because of these complaints, which only serves to reinforce them as ways to avoid something unpleasant and increases school problems because of the time and material missed. Other children become preoccupied with eating as a way to avoid negative feelings and feel better. Some overeat because they are anxious or depressed. When they put on weight, they feel bad about how they look. Others think that they are too fat even when they're not and keep trying to lose weight. They believe that if they are thin, they will be perfect and everyone will like them. Children who focus too much on eating and their body size usually don't feel very good about themselves.

In the same way, children who smoke or use alcohol or drugs don't usually feel very good about themselves. Using drugs and alcohol may make them feel better for a while, but when the effects of the drugs and/or alcohol wear off, the negative feelings return. The use of drugs or alcohol to "treat" feelings of anxiety or depression is never successful and usually causes additional problems that increase these negative emotions.

CONCLUSIONS

Emotions and learning occur in the brain. Learning means acquiring knowledge or skills. Learning requires thinking. Our thoughts influence how we feel. How we feel influences how we think. The connections between emotion and learning are bi-directional and complex. When we think about a happy incident our mood improves. When we think about an angry incident, we are likely to feel angry. Also, being in a happy mood causes us to think happy thoughts; being in a sad mood brings sad and negative memories and images to mind. There is much research to support that our current mood influences the way we think, perceive events, remember and make decisions. Being optimistic makes us think more positively, be more creative and see and remember neutral events as positive.

Because we cannot see our emotions directly, we look to our behaviour and that of others to infer how we feel. So our emotions are determined by our interpretation, or what we think about what we see. For example, if someone bumps into us while we are waiting in a line, if we decide that the person who bumped us did this deliberately, we would react with anger. If we conclude that the person tripped on something on the floor, we wouldn't get angry or take defensive action. Also what we expect to happen influences our emotional reaction. If we expect to enjoy a movie, we probably will. If someone told us that we wouldn't like it, we likely won't. Our expectations become our reality and are remembered as such.

Emotions are the relay stations between sensory input and thinking. When the input is interpreted positively, we are motivated to act and achieve a goal. When the input is interpreted negatively, we do not act and do not learn. Negative emotions can be the cause or the effect of problems with learning. Anxiety, depression and anger or frustration can interfere with learning and can result from problems with learning, creating a maladaptive and self-defeating pattern of behaviour, which prevents learning and stunts mental/emotional growth. Lack of success or

failure to achieve our goals can be externalized as anger, frustration and acting out, or internalized as anxiety and depression. These emotions are toxic to our well-being and colour our world in shades of black and gray. Enjoyment colours our world in bright colours, motivates us to succeed and brings pleasure to life. We cannot become emotionally intelligent if we are unable to learn to think rationally and control our emotions.

Dr. Lawson is a clinical psychologist at the Centre for Development and Learning.

Emotions drive our attention and perception. We form positive and negative core memories because of the emotional intensity that we've attached to the event or experience.Â 4. Do students understand the negative role that stress plays in cognitive functioning with regard to learning, memorizing, and retrieving information? 5. How might we begin a class period or day with an emotional check-in? What is the weather in your brain? Could we use laminated notecards with the primary emotions for younger students and the primary and secondary emotions for older students? Students could display the feeling that they are holding as they begin class and note how it changes throughout the day. Questions for Students.