the emotional learner

Understanding emotions, learners and achievement

Marc Smith

ROUTLEDGE

The Emotional Learner

The Emotional Learner combines practical advice with the latest evidence to offer essential guidance on how to understand positive and negative emotions. Taking its reader on a tour of the most significant research from psychology, neuroscience and educational studies, it reveals that in order to ensure educational success, teachers must have a deeper understanding of how and why emotional states manifest themselves in the classroom.

Written by experienced teacher and psychologist Marc Smith, the book examines the complex relationship between cognition and emotion, clearly and thoughtfully exploring:

- What we mean by 'emotions' and why they are important to learning
- Understanding master and performance learning orientations
- Cognition, emotion, memory and recall
- Personality and motivation
- Dealing with boredom in the classroom
- Activating and deactivating emotional states
- Navigating the teenage years
- Understanding the positive and negative impact of anxiety and stress
- Fear of failure, how it evolves and how to combat it.

The Emotional Learner is a compelling, accessible introduction to understanding that how we feel is intricately linked to how we learn. It will help all those involved in teaching children and young adults to challenge common-sense assumptions about the role of positive and negative emotions, showing its reader how to teach 'with emotions in mind' and ensure positive academic outcomes.

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Understanding Emotions, Learners and Achievement

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Contents

1 It's not easy being a Vulcan

> May I say that I have not thoroughly enjoyed serving with humans? I find their illogic and foolish emotions a constant irritant?[1]
>
> (Spock)

Despite never having considered myself a *Trekkie*, I have always possessed a certain degree of admiration for the Vulcan race, and Mr Spock specifically. Star Trek has been in my life for as long as I can remember, from the original 1960s show with the wonderfully ham James T. Kirk through its many incarnations on the small screen to the more recent blockbuster movies. I can't speak Klingon and I've never been to one of those conventions where people dress up as Andorians or Ferengi or any other alien species represented in the Star Trek universe, but there was always something about Spock that appealed to me. The appeal was that Spock had the ability to control his emotions to such an extent that he appeared totally devoid of them. Vulcans do experience emotion (and more extremely than humans) but over time they have learned to suppress them in order to live more productive and harmonious lives. Certainly, Spock was right when he claimed that emotions are irritating; they often get in the way, alter our behaviour, force us to act in irrational ways and disturb us, but as for being illogical?

Emotions are far from illogical, even though they may at times be very painful. Dale Carnegie, the grandfather of the self-improvement

movement, suggested that humans are ultimately emotional rather than logical creatures, which is perhaps why Spock found them so frustrating. Carnegie certainly had a point. American psychologist Drew Western (author of *The Political Brain*) has spent most of his academic career studying the voting habits of the US electorate, concluding that people rarely make logical decisions when it comes to choosing their government. On the contrary, voting behaviour is much more likely to be an emotional response rather than a logical one, a phenomenon that appears to have had at least some impact on the 2016 UK referendum on European Union membership. If our voting habits are fuelled by emotions, it's highly likely that other decisions are too.

Of course, we would be poorer in spirit if emotions did not reside within us. Without emotions we would never be able to experience joy or lose ourselves in awe at the first sight of our newborn child; we would never be able to engage in fits of laughter that cause our cheeks to ache and tears to flow from our eyes. Conversely, without emotions we could never experience the bitter pain of sorrow, the yearning for someone lost or the sharp pangs of empathy at the sight of another in distress. I would not want to be like Spock, lacking the capacity that not only makes me human but also makes me who I am. The point Spock misses (and yes, I do understand that he is a purely fictional character) is that emotions serve a purpose, they aren't simply an evolutionary hiccup; on the contrary, they are necessary for human survival. Emotions let us know when there is danger, or when a close friend requires our understanding and support. Indeed, those humans who display a lack of emotion are seen as somehow lacking in basic human function. Emotionless individuals are often viewed as abnormal or suffering from some kind of psychological deficiency because society values emotions and views them as a basic human quality.

Emotions also have their dark side. Anger and rage can be destructive and result in harm to oneself and to others who dare to get in our way. Extreme sadness can lead to some individuals harming themselves or withdrawing from society, neglecting the basic human need to connect with others. According to the mental health charity Young Minds, one in every ten children aged between 5 and 16 years

suffers from a clinically diagnosable mental disorder. Let's put that into context shall we? In every school classroom there are around three children who are struggling due to some kind of mental health problem. For every 12 to 15 children in any classroom, at least one child will have deliberately self-harmed. In fact, over the last ten years figures indicate that there has been a 68 per cent increase in the number of young people admitted to hospital because they have deliberately harmed themselves in some way. I could quote even more harrowing statistics, but I expect you've got the message by now.

These statistics highlight the power of emotional responses to external events. Emotions guide and often determine behaviour, raising us up and then allowing us to crash back down to earth. This book isn't about adolescent mental health, it's about the normative and the ordinary rather than the extreme. Nevertheless, it's worth taking a couple of steps back in order for us to think about the emotional lives of learners and survey our surroundings. If we consider the extreme end of the emotional continuum, three children in a class have some kind of diagnosable mental illness (one that might have gone undiagnosed). How, we might ask, does this impact on their educational progress? Children who are struggling with their own emotions may well be diverting precious cognitive resources to simply surviving from day to day and so are unlikely to be fully engaged in the learning process. It might appear that a particular child isn't paying attention or seems disengaged, quiet or withdrawn; it might be that problems manifest themselves in disruptive behaviours and defiance. What about the student who constantly worries about passing a test or getting a good mark for their homework, or the child so overcome with anxiety that they fall apart when asked even the simplest of questions in class? Teachers are familiar with the often unusual responses they receive from students; some are fleeting while others seem ingrained and habitual. When I was young I would rarely volunteer answers in class due to anxiety (a condition I have struggled with for most of my life), which inevitably made me a target for some teachers who felt that it was their duty to bring me out of my 'shell'. The truth was that I liked my shell very much because it made me feel safe. Furthermore, I knew that if I drew attention to myself I would

become flustered and turn the most startling shade of crimson. The fear of looking incompetent (or resembling a tomato) caused me to withdraw even further so that by the time I was asked a question in class, I had already become a quivering wreck of nerves and anxiety.

These anxieties fade but never quite disappear. As someone who displays introvert characteristics (I'll avoid claiming to be 'an introvert' for a number of reasons I describe in Chapter 5), I also know that I approach new places, people and situations very cautiously, over-vigilance being one of the traits associated with introversion. When I became a teacher I almost forgot about how anxious I was as a child and, much to my shame, assumed that my students somehow didn't suffer from those same anxieties. It took me a few years to really find my feet as a teacher, but eventually I managed to establish some kind of rapport with most of my students (some students will simply hate you regardless and this, in itself, came as somewhat of a shock). I believe that some people are natural teachers while realising that this view isn't uniformly held. Although I always saw myself as approachable, as time passed it became clear that I was grossly mistaken. It took a 17-year-old student named Emily to make me fully aware of this.

Emily always seemed very able and confident and gave the impression that her positivity knew no bounds. When her grades began to fall and she began to miss lessons I decided we needed a chat. It transpired that Emily had felt she had been struggling for some time but didn't feel that she could ask me for help. 'You think I'm so clever but I'm not', she said, 'How could I tell you that I was struggling?' I'm not claiming that this exchange was some kind of revelation, an epiphany that would shape the rest of my career, but it did make me pause and take stock and think about how I labelled pupils in both positive and negative ways. Emily had become a prisoner to her anxieties about her own potential failure and falling from the pedestal I had placed her on. She became preoccupied with not failing and, as we will see in Chapter 10, fear of failure can lead to some very destructive behaviours.

Anxiety is perhaps the most obvious choice of negative emotion here, and there has been substantial research conducted on its impact on learning. Like the younger me, anxious children become

more flustered; they forget the material they have been given to learn, misunderstand instructions and constantly fear being asked questions in class. They may even become temporarily mute if challenged to produce an answer. The immediate solution might be to help the student relax or assist them in the nurturing of positive emotions. However, the relationship between positive and negative emotions is a complex one and some areas of research have erroneously linked positive emotions with positive academic outcomes and negative emotions with poor outcomes (Chapter 3). Disentangling this complex relationship constitutes a weighty task and it will no doubt be some time before we have a clearer understanding of how these constructs operate. For now, however, we can attempt to piece together what we currently understand about the ways in which emotions (both positive and negative) impact learning and why being a Vulcan doesn't necessarily make you more successful.

Emotions aren't illogical

Spock was wrong – emotions aren't illogical. Humans are emotional beings, so how individuals recognise and regulate these emotions can have a major impact on future trajectories. Psychologists use the somewhat awkward term 'affect' to describe our experience of emotions and recognise that affect can be both positive and negative. The term 'affect' is useful, simply because it sidesteps the tricky question of whether emotions actually exist. This might seem an odd statement (especially when you consider the topic of this book), but the subjective nature of emotions can mean that their very existence can be challenged. You'll probably find that I use the term affect and emotion interchangeably, just be aware that I am (usually) referring to the same thing but, for convenience, I'll use both affect and emotion despite their differences. Emotions effect people in different ways, and while some are guided more by their emotions, others might be more logical and pragmatic in their approach. Emotions are also ingrained deeply into language, in that we might be an emotional person or someone

who is 'in touch with their emotions' or someone who values their 'gut instincts' that often defy any logic. Others might be said to allow their emotions to 'get in the way' of rational and logical decision-making and there are some occupations where being able to keep emotions in check is preferable to the alternative.

During the early days of psychology there was a great deal of interest in emotions, but its reliance on introspection resulted in its decline as a serious area of research as psychology fought to claim its place as a serious scientific discipline. For many years, emotions were not seen as a particularly suitable area of research, perhaps in part due to their subjective nature and the fact that they are quite slippery things – they move about, darting from one extreme to another. They are also quite difficult to quantify in any meaningful way because we can never really be sure that the emotion I feel is the same as the one you feel in the same situation. People react differently in different situations and our behaviour can, at times, run counter to social norms, especially in traumatic situations. Despite these problems, research is now returning to the study of emotions as new technologies and research techniques provide more effective ways of understanding their role in people's lives. Furthermore, a growing number of scientists are now investigating the link between emotion and cognitive function (that is, aspects related to memory, learning and attention), and this new field of investigation is beginning to inform us about how emotions affect the way we think and learn as well as how they arise in the first place. Others are investigating how emotions impact on future success and failure in work, sports and life in general and are asking questions about how factors like emotional regulation influence our future.

Learning is more than cognition

Learning is a complex process and is much more than just the process of storing information in long-term memory for it to be retrieved at a later date – memory doesn't work like that anyway. To say that learning is just about cognition is like saying that riding a bike is only about pedalling.

When we learn to ride a bike, one of the main skills we need to learn is to pedal, but we also need to balance and apply the brakes when necessary to avoid collisions and to bring the bike to a stop. The process of learning certainly requires the engagement of cognitive processes, but without other so-called non-cognitive processes learning simply won't take place. The process of learning, therefore, involves cognitive, emotional as well as social processes.

Cognitive processes

This is perhaps the most important. Cognition is all about the thought and regulatory processes involved in the recognition, storage and retrieval of information. Committing information to memory also includes other cognitive processes such as perception and attention. However, basic forms of learning can take place without memory (as has been seen in individuals with severe memory deficits), and memories themselves are often highly inaccurate.

Emotional processes

How we feel during the learning event can enhance or impair the way in which we attend to such events, how we store information received during the event and the ability to retrieve stored information after the event. Specific emotions such as curiosity can enhance while others such as boredom can impair.

Social processes

Learning cannot take place in a vacuum. Relationships can make or break the ability to engage in any learning event. This is particularly important during the early stages of learning when children are developing their social skills and gradually beginning to understand what it is to be part of a group.

Although this book is specifically about emotional processes in learning, in reality all three components (cognitive, emotional, social) operate together.

Cognitive or non-cognitive?

As the pressure increases on students to achieve in high stakes exams and the wellbeing of our young people decreases (and mental health issues rise), investigating the role of that basic of human qualities seems an obvious road down which to travel. Certainly, the research base already exists in direct and indirect ways, but has so far failed to reap any real rewards in the classroom. Recently, certain skills have been identified as 'non-cognitive' in an attempt to distinguish them from those more directly related to aspects of learning such as memory and attention. These non-cognitive skills relate to attributes including resilience, character and grit, and while it can be argued that all personal attributes involve some kind of cognitive regulation and control, the label provides a useful way of distinguishing one group of skills from another. The number of interventions designed to measure and build on the attributes continues to grow, but, unfortunately, many are rarely implemented in a uniform way and definitions are often used differently. For example, a review of resilience programmes in UK schools published in 2013 found that many interventions used the term 'resilience' in such a vague way that the authors of the report were unable to identify exactly what was being measured (Hart & Heaver, 2013). Indeed, the role of emotions and emotional regulation forms a key component in our ability to cope with setbacks and deal with failure, so there is an intricate relationship between emotions and cognitions. One resilience intervention that does appear to include emotional characteristics is also the most widely used. The Penn Resiliency Programme, designed by leading psychologists at the University of Pennsylvania, is based around the optimism character strength, and suggests that by encouraging an optimistic and positive outlook on life and learning we can improve wellbeing and 'inoculate' individuals against helplessness.

The positive 'revolution'

Unfortunately, we rarely discuss the emotional lives of learners unless their negative emotions are a cause for concern (such as extreme anxiety or debilitating depression). Rarely do we link emotions to the learning process and rarely does it occur to us that many emotional reactions might be caused by the learning process itself. In fact, when we talk of teaching and learning there is scarcely any mention of the role emotion might play in success and failure beyond the occasional discussion over the existence or otherwise of concepts such as emotional intelligence. In a similar way, psychology is still often concerned with the treatment of mental illness rather than the prevention of it. This situation has started to change with the rise of what is known as 'Positive Psychology', associated with the study of happiness and wellbeing. While the principles of Positive Psychology remain well intentioned, there has been a growing concern about its methodology and scientific rigour, despite the movement being populated by some of the leading figures in psychology. The Penn Resiliency Programme, for example, arose from Positive Psychology and there have been further theories and ideas (some of which I will discuss later) that have grown out of this movement. However, the mistaken premise of the pursuit of happiness has forced the movement to shift its emphasis over the years. While research conducted under the Positive Psychology banner can certainly be useful, it can also often prove detrimental.

Should we 'emotionalise' education?

One concern that inevitably arises when we bring up the whole topic of emotions within an education setting relates to what has become known as the 'emotionalisation of education'. The concerns centre on the idea that we are taking normal life difficulties and somehow reframing them in terms of some kind of psychological deficit, following the shift seen in Anglo-American societies towards a more therapeutic ethos. Anxiety and fear are normal everyday emotions experienced by

students even before formal education became the norm. When I was at school there was no talk of children with special educational needs, there were no teaching assistants to help the weaker students and there were certainly no interventions to help with exam anxiety. Back in those dark days teachers taught and, while there were a few who could be relied on to support children emotionally, many teachers rarely even thought about how their students were coping in that way. Now, of course, the shelves of our bookshops are filled with self-help guides and pop psychology – personal development is big business and the rise in psychological intervention programmes bears witness to such changes. Education is becoming more concerned with relieving stress, teaching coping skills and ways of dealing with the ups and downs of daily life. Even in our work as teachers we are more aware of wellbeing and work–life balance than ever before, and we hear more and more about character development, mindfulness and resilience training.

The emotionalisation of education is a response to changes within education and the pressures that didn't exist 30 or 40 years ago. I recall very little pressure to do A-levels or to go on to university so, consequently, I left school at 16 with a handful of rather poor exam results. Today I see the pressure placed on students that I never had, plus the pressures on teachers that didn't seem to exist when I was at school. League tables have placed pressure on schools, and these pressures are often passed down to students who are issued with target grades and expected grades and a constant flow of data that is expected to show linear progression. There is the expectation that the majority of those leaving school will go to university (whether they want to or not), placing pressure on them to get this grade or that grade in their A-levels. The reality is that there is certainly more pressure on young people today than three or four decades ago and this pressure appears to be increasing as the reliance on high stakes exams increases. Such pressure begins early and there is evidence that children as young as 6 or 7 are already beginning to compare themselves with their peers (they appear to be developing a *performance goal orientation* which I discuss in Chapter 2), for example, by writing themselves off in some subjects because they have been placed in low ability sets.

I stress that teachers are not mental health professionals (and shouldn't be expected to act as if they were), but they do come into contact with young people more often than any other group. It would therefore make sense for the profession to be aware of emotional issues and the ways in which they impact on learning. I say 'aware' because dealing successfully with extreme emotional issues is a job for trained professionals, and teachers are trained in teaching, not in dealing with mental health issues. However, while there is some debate surrounding the existence of a child mental health crisis, there is certainly a wellbeing issue to be tackled, certainly in the UK where our children are some of the unhappiest in Europe. While this book does touch on some issues at the extreme end of the spectrum, its primary aim revolves around the normative functions of emotion and learning.

Emotions are related to goals

There is a growing body of evidence indicating that emotions arise as a result of appraisals related to our goals – more precisely, achievement goals. This is also more relevant to education and learning as goals play a major role in the learning process. If we accept the premise that human actions are goal directed (and there is little to suggest that they aren't) then it must logically follow that goals underpin actions, thoughts and emotions. Lisa Linnenbrink-Garcia, an educational psychologist at the University of Michigan, has extended this argument by suggesting that goals are central to linking motivation, cognition and emotion (see, for example, O'Keefe and Linnenbrink-Garcia, 2014). Others, such as Reinhard Pekrun at the University of Munich, have further hypothesised that emotions arise from judgements about how successful we are at achieving our goals, the importance of these goals, how much we feel in control and how able we feel to handle any problems that arise (Pekrun *et al.*, 2007). Of course, the assumption here is that all goals are achievement goals (and these are certainly the most relevant in respect to teaching and learning), but other goals may also play an important part. Schools are more than just about learning and academic achievement, and other goals such as a sense of belonging play a part

in both wellbeing and academic success. The feeling of belonging to a school, a year group or a particular class might lead to greater feelings of wellbeing and consequently a greater desire to engage in the learning process.

Hopefully I am winning the battle to convince you that emotions are a crucial and inescapable part of the learning process. No more obvious is this than in the part played by emotions such as anxiety (Chapter 6). In societies that rely heavily on the use of regular high stakes testing, those students who are unable to cope with even minor levels of anxiety will suffer more than those who are less anxious. Test anxiety has been found to have a detrimental impact on a specific form of memory known as working memory. Working memory is a type of short-term storage used for manipulating information that has been drawn from our long-term memory store. If you close your eyes and count the number of windows in your house, you are taking the memory of your house from the long-term memory store and transferring it into working memory. Once there, you can picture each part of the house and keep a tally of the number of windows. This is the same place where we engage in mental arithmetic and all types of problem solving from complex instructions to crosswords and Sudoku. It is also the place where we keep the instructions given to us by other people. So, a teacher might ask the class to finish writing the sentence they are on, put their pens down and bring their work to the front of the class. Children with specific problems with their working memory might have difficulties following such instructions because their working memory simply doesn't have the capacity. As a result, they might forget to finish the sentence and put their pen down and, instead, simply bring their work to the front of the class. Those children who suffer from anxiety might experience similar problems, not because of the working memory per se, but because their anxiety is impairing their ability to hold on to the information. In a system where students are expected to rely more and more on their ability to remember huge amounts of information, anxiety can mean the difference between success and failure. Researchers have even found that anxiety negatively predicts lower GCSE scores (Putwain, 2008). With a system where schools are judged so heavily on exam results, it's a wonder more of

them don't spend more time identifying test anxious students and supporting them with appropriate interventions.

So, what are emotions anyway?

I've rambled on quite a bit about some of the ways emotions can impact learning and introduced the idea that emotions as we understand them might not exist at all. However, if we assume that they do exist (rather than simply being a statistical abstraction), we need to be as clear as we can about what they are. There's an assumption here that we all understand what an emotion is and is not; we seem to instinctively know what emotions are without having to define them in any kind of formal way. At this point I must confess that I like definitions; I like to know that my understanding of a concept is the generally held view and I think this is necessary because it avoids confusion and crossed wires. Common sense often guides our understanding of concepts, and emotions are no different. Emotions impact on and often guide our behaviour (as I have already discussed); they produce physical responses (such as crying or laughing), psychological responses (they might cause us to take stock of ourselves as individuals) and social responses (we use emotions to place ourselves within a wider social context).

Many researchers view emotions as three separate but interrelated constructs: affective tendencies, core affect and emotional experiences:

- ***Affective tendencies*** provide a lens through which we view our relationship with the world; in other words, how we view the world and our place within it. For example, if we see the world as a frightening and threatening place, then our transactions or behaviours will be based on the tendency of fear (this would include the school environment). These tendencies develop through a number of pathways, such as socialisation, individual beliefs, approach avoidance motives and personality.
- ***Core affect*** refers to how we feel at any particular point in time. Researchers measure core affect through a combination of valence (a continuum from pleasant to unpleasant) and arousal (the range of

activation measured from low to high). For example, we might measure the experience of a formal exam as unpleasant (valence) but high in arousal (raised heart rate, increased adrenaline secretion, etc.).

- ***Emotional experiences*** represent the socially constructed and personally acted ways of being. These are formed through conscious and unconscious judgements about our perceived success at attaining goals or maintaining our standards and beliefs. If we view our goals as the difference between where we are and where we want to be, then our core affects will tend to become our emotional experience via our appraisals and attributions about what is happening during a particular episode and based on our goals, values, beliefs and social networks.

So how do we distinguish an emotion from a non-emotion? Thankfully, there is some consensus when it comes to defining an emotion, and there is (general) agreement that emotions represent coherent clusters of components based around a number of features. Just how many of these features should be present for these clusters to be termed an emotion is open to some debate. There certainly seems to be a consensus that there are at least five, including distinctive facial and vocal expressions, distinctive physiology, rapid onset and brief duration. For our purpose, I shall yield to the five definitions adopted by Sandi Mann in her wonderful little book *Emotion: All That Matters* (2014): cognitions (what we think), feelings, physiological reactions, behaviour and expressions (although emotions can occur in the absence of outward expression – even though, I suspect, some expressions would occur at a micro-level).

Emotions, then, can be seen in others as well as experienced by the individual – if we are sad then we might cry; if we are angry we might screw up our faces. Facial expressions, however, can cause a particular problem, and many researchers claim that they aren't necessary in order to classify an event as an emotion. Extreme emotions like pleasure and plain, for example, appear to result in startlingly similar facial expression.

For an emotion to be an emotion it should include the above features – if it doesn't then it's something else. This leads us to the more problematic

question of how many emotions there are. As far as emotion researchers are concerned, there is no real consensus. Some say that there are six (anger, disgust, fear, happiness, sadness and surprise), with others claiming that there are eight (the previous six plus joy and anticipation) with all other emotions being a combination of these core emotions. This is certainly problematic for those researchers who investigate emotions absent from the list such as boredom and interest. The thing is, we kind of know when an experience involves an emotion even if we can't quite decide on what emotion that is. Because of this subjectivity, labelling emotions isn't really essential. We might experience emotion and just think 'oh, I feel really out of sorts today' or 'I'm just in a funny mood'. Emotions are as much about having the language to describe them as having an objectively based label for them. There is, however, a way out of this empirical dilemma. American psychologist Robert Plutchik proposed that there are eight basic emotions that he groups in pairs of opposites (Plutchik, 2001). According to the Plutchik model, the eight basic emotions can be blended, just like colours, in order to produce a large number of related yet distinct emotions. This helps us because we can then include more learning-appropriate emotions such as interest, boredom and curiosity into our discussion without having to worry too much about whether these constructs can be thought of as true emotions – we can widen our definition to include 'basic' and 'blended' emotions. Furthermore, the ability to blend emotions allows us to widen the emotion definition and account for pretty much every word we use to label the multitude of subjective feelings experienced over a seemingly infinite number of personal experiences. With regards to learning, it allows us to identify emotions specific to the learning process such as interest, distraction and boredom.

We can see that however we decide to categorise emotions, they are linked in some way to our personal goals, and the relationship between emotions and goal achievement becomes more obvious when we start looking into the role of failure (Chapter 10). The road to achieving our goals is rarely a straightforward one (unless we set ourselves unrealistically low goals) and it's a road full of potholes, bumps and nasty mud patches that can so easily derail us or send us off in unexpected directions before we reach our final destination. Progress is rarely linear and

there is likelihood that those students who do make sustained linear progression do so because they have set (or have been set) goals that are below their abilities. The idea that progression is linear and that students should make progress day on day and week on week is quite simply inaccurate and incredibly unhelpful because there are so many factors at play here. In fact, data from Education Datalab (a group involved in education research) indicates that fewer than ten per cent of students in UK schools make linear progress between key stages (Education Datalab, 2016). If we think of emotions as being linked to progress goals then, as educators, we begin to better understand how they impact learners on their long and very winding road. Emotional responses experienced as we get closer to achieving our goals or suffer setbacks, are crucial to motivation, resilience and mental toughness or 'grittiness' (our dogged determination to get there in the end no matter what life throws at us). Furthermore, certain emotions will hold us back at different points and in different circumstances – a student might lose confidence in a particular area and develop a fear of failure, or might react badly to a change of teacher or class. Some emotions are perhaps more relevant to teaching and learning than others. Nevertheless, they all play a role. Fear, anxiety, anger, boredom, interest, curiosity and so many others will help and hinder at different times, ultimately impacting on long-term goals which, in a system dominated by high stakes testing, translates into exam grades.

What's the point of emotions?

Emotions exist because they serve an evolutionary purpose. In other words, emotions have some kind of adaptive value – otherwise, evolution being the clever thing that it is, would have deleted them a long time ago. Even Vulcans have emotions; they have just learned to control them. Emotions help us deal with life tasks and help our species survive; this is the reason they share certain characteristics and common elements despite individual and cultural differences. That is, even in the most diverse of cultures, emotions will display certain similarities that can't be explained through socialisation or learning that takes place

within that specific society or culture. If emotions are evolutionary, we should also be able to detect them in other primates even though certain emotions might be unique to humans. First and foremost, emotions are a biological response to a situation (be it good or bad) and the speed at which our biological system reacts can often be mesmerising. Our biology reacts by setting in motion a set of involuntary changes in both our expression and our physiology; so our facial expression might change even before we are aware of our response (as can often be seen with an emotion like disgust). In relation to learning, a student might be struck dumb or freeze when asked a question in class and, while some might interpret this as defiance or ignorance, the student might not be fully aware of their response. In this case, the experience of an emotion (anxiety) is seen as happening to them rather than something chosen by them. In the same way, we might see a face 'light up' at the suggestion of a topic a student finds particularly interesting.

Psychologist James Averill agrees that emotions fulfil vital biological functions for the survival of the species. According to Averill (1980), basic emotions should be universal – they should be seen in non-human primates and should be heritable. The problem here is that there is little consensus across cultures of what these basic emotions are; not only do they vary between cultures, they also vary within cultures over time. While it's clear that emotions are evolutionary, exactly what constitutes a basic emotion can be thought of as socially constructed. Furthermore, the most basic of basic emotions are likely to be psychological in nature, in that they have a transformative capacity in terms of our sense of self. This is important to the learning process because it suggests that constructs such as self-esteem and self-worth are guided by emotions and the ability to enhance and transform the way in which we see ourselves, as well as our beliefs about how others see us. Let's take the example of the anxious student being asked a question in class. The teacher says the student's name and asks a question. The first component of any emotion is subjective – the personal experience of being singled out and quizzed. The second component is physiological (raised heart rate, increased perspiration, raised blood pressure and so on). The final component is a behavioural one and for our over-anxious student this

might manifest itself in silence, fidgeting or even crying. To the teacher asking the question, this might seem like a highly irrational response to a simple question, but to the student a complex set of variables are being played out, based on a number of largely psychological factors. The student has become overwhelmed by their emotional response to the situation – anxiety has been 'done to them'; it is not a course of action they have chosen.

Regulating emotions

People react in different ways to the many emotions they experience. We can respond to these emotions in both positive and negative ways, but as we mature we tend to become better skilled at expressing emotions in more constructive ways. Young people are often more impulsive, quicker to anger and sometimes more prone to certain negative emotions brought on by their experiences. The more emotions we experience over time, the better we become at what is termed 'emotion regulation'. Psychologist James Gross defines emotion regulation as 'the process by which individuals influence which emotions they have, when they have them, and how they experience and express them' (Gross, 2002, p.282).

More specifically, emotion regulation involves being able to think constructively about how to cope with feelings, not being overwhelmed by emotion. This would include feeling discouraged but not giving up, feeling anxious but not allowing that anxiety to limit your daily life and getting excited but not getting so carried away that you resort to poor judgement when making important decisions. While many theories of emotion regulation stress the use of cognitive processes, the setting of limits and the development of self-control, psychologist Kenneth Barish suggests that it's more important to ensure that people, and especially children, feel confident that their feelings will be heard. Barish goes on to claim that when there is an expectation from the child that their feelings and concerns will be appreciated and understood, problematic emotions become less urgent and, consequently, this reduces the pain of disappointment and frustration (see, for example, Barish, 2012). This might not be a popular notion amongst some teachers, yet it helps

us to at least consider wider possibilities beyond simple rewards and punishments.

Unfortunately, many of the strategies people use to deal with emotions are often maladaptive. Appropriate emotion regulation has been linked to higher levels of personal wellbeing and academic success, but often the strategies we use have a deeper emotional impact. Maladaptive behaviours include:

- ***distraction*** – trying not to think about what is causing the distress;
- ***rumination*** – continually going over the problem in our mind and revisiting the distress it causes us;
- ***worry*** – focussing on the negative aspects of the problem;
- ***thought suppression*** – redirecting our attention away from the problem and focussing on other content. Thought suppression often leads to a greater focus on the distressing emotion.

Students who, for example, suffer with test anxiety may well ruminate on an impending exam and worry about failing or looking stupid in front of their peers. Others might forego exam preparation in order to distract them from the negative emotions associated with exam taking. Younger children may even ruminate out loud while others might use internal dialogue in an attempt to regulate their emotions, that is, they might talk to themselves. Talking to oneself isn't necessarily a sign of maladaptive or worrying behaviour and can actually serve an important adaptive function dependant upon its context. Those who are able to employ more adaptive strategies are said to display greater emotion regulation and function in a more positive way.

The implications of adequate emotion regulation have been demonstrated in a number of interesting ways. A series of studies that offer insights into how young children do this was conducted by Walter Mischel during the late 1960s and early 1970s. Commonly known as the Marshmallow Experiment (but actually a series of experiments), Mischel and his team tested the ability of 4-year-old children to delay gratification of a desired object – in this case, a marshmallow. The child was seated next to a table upon which had been placed a marshmallow.