

Still Thinking and Feeling: the location of emotion in the creative and learning experience (Part 2)

Paper adapted from the Keynote presented on 5 July at the Design and Technology Association Education and International Research Conference 2007 University of Wolverhampton, Telford. David Spendlove University of Manchester

Abstract

This paper, the second of two parts, continues a broad overview of new opportunities for considering the location of emotion within a creative, learning and product orientated design and technology experience. The paper builds upon the author's previous work and considers the location of emotion in three fluid domains: Person, Process and Product.

The paper argues that for truly creative, engaging learning experience, the location of emotion is central but, more importantly, understanding the relationship of emotion to our decisions making offers greater opportunities for our future creative development.

Key words

creativity, emotion, design and technology, memes, perception

Introduction

Having outlined the location of emotion in the previous edition of this journal (Spendlove, 2007c), this paper, adapted from the research keynote: We Feel Therefore We Learn, presented at the D&T Association Education and International Research conference 2007, continues a broad overview of the field of emotion whilst looking more specifically at the individual domains of emotion identified within the triadic schema below (Figure 1).

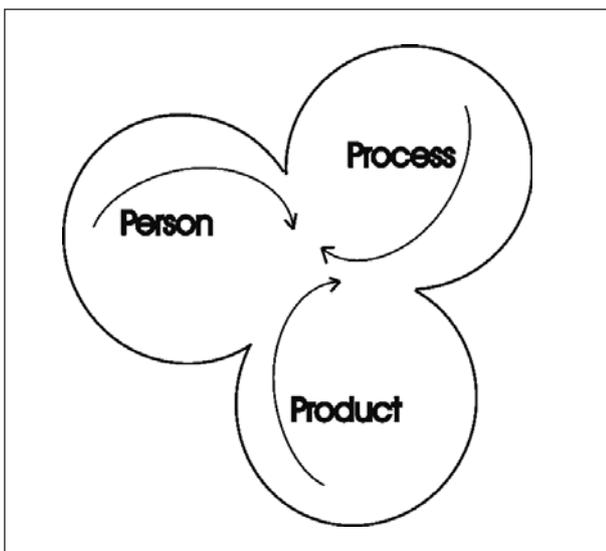
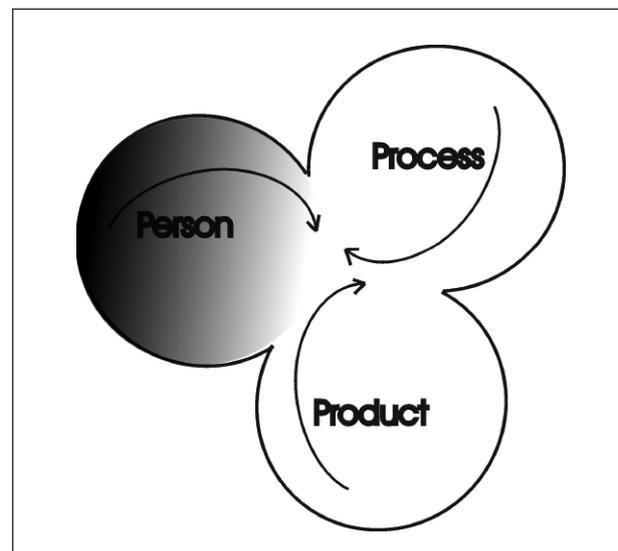


Figure 1. Triadic schema for locating emotion in person, process and product domains.

The starting point for this discussion is my conviction that emotion is central to our ontological and epistemological beliefs. As such we are driven by our emotions and that we have to be able to understand our emotions as well as being able to utilize and critique them.

Having previously established that we are products of our emotions and subconscious processing (Spendlove 2007c) and that our thinking is driven, clouded and directed by our emotions in this paper I will focus on the individual stages represented in the triadic schema (figure. 1). This has been dealt with in greater detail in previous publications (Spendlove 2005, 2006a, 2006b, 2007a, 2007b) from a variety of perspectives and in this paper I will expand these areas to consider some other possible influences notably emotionally driven autonomous processing.

Finally, I will propose that creativity offers an opportunity to evolve our capacity to override what may be a lack of autonomy in our sub-conscious processing and emotions.



Person

Central to the person stage is what Stanovich (2004) has described as the TASS system (The Autonomous Set of Systems) that mostly pursues the genes' goals. That is to protect our genes. In other words our thinking and own personal development may be compromised in the pursuit of our gene protection. Before going further this needs to be contextualised within Dawkins (1989) work

Still Thinking and Feeling: the location of emotion in the creative and learning experience (Part 2)

on the Selfish Gene and the mistaken premise that genes 'are there to make copies of us' which Dawkins suggest is 180 degrees off. We are here merely so that the genes can make copies of themselves. They are the primary driver whilst we are merely secondary to the process and the reason we exist is because it once served their ends to create us. We don't make copies of ourselves at all, but genes do and as such we are built as gene propagators, created to pass on our genes. This is not some menacing experiment but merely the harsh realities of Darwinism.

Accepting Darwinism (or Spencerism who popularised the phrase, survival of the fittest) leads us to consider that our genes are replicators and we are merely their vehicles can be a destabilising thought. Stanovich (2004) suggests there is however an escape hatch. The lumbering robots, a term adopted for the vehicles (which I do not think helps the analogy), can adopt a disposition where the selfish gene, as promoted through our actions driven by our emotions, can override the TASS system. Stanovich describes this as the 'Robots rebellion' where we are the robots (at this point I have to ask you to remove all existing images of robots from your mind). In other words the impulses that drive us are not geared towards our own self development but through reflective understanding of our goals our thinking driven by our emotions can be redirected from our impulses. Stanovich argues that many of the goals of the analytic system are irrational and ultimately damaging to our own self development as exemplified by terrorism, wars, industrial disputes, economic failures, environmental disasters and so on. The first step in readdressing this imbalance is to recognise the cultural practices and popular myths, in the form of memes (Dennett, 2006) and narratives (Taleb, 2007) that shape our emotions and that value the propagation of genes over our own self development.

As Stanovich points out, we have three players in the game; three sets of interests that potentially control our behaviour. The genes have given us TASS (the autonomous set of systems), which includes giving us responses to hunger, thirst, and sexual stimulation as well as in-built preferences and peculiar methods of reasoning, selective perceptions and 'myside' bias (Stanovich 2007). The memes have given us all kinds of new behaviours, self beliefs and desires, including positively harmful ones like martyrdom and warfare, as well as useful ones that increase our intelligence and reasoning power. Finally there is 'us', the vehicle that appears to have its own conscious agenda to survive and be happy and fulfilled.

Central to this is the concept of cultural transmission through memes – the cultural equivalent of gene

replication. Everything you have learned by copying (consciously or subconsciously) from someone else is a meme; every word, every catchphrase, every story you have ever heard and every song you know, is a meme and as such they are a powerful medium for cultural influence and shaping. Blackmore (2002) points out that they (memes) are the very behaviours and artefacts that fill our lives. They are whatever is copied and the fact that you may wear jeans and a T-shirt to work, the style of your house, your bicycle, the design of the roads, and the colour of the buses – all these are memes. Such meme propagation has however undergone a radical shift in the last twenty years and the copying of behaviours, tunes and actions has been significantly enhanced through email and the World Wide Web through websites such as YouTube, MySpace and Facebook. An example of this is the most viewed video on YouTube for 2006/07 is the 'evolution of dance' with over 51 million people watching it in just over a year!

Dawkin's (1989) identified three characteristics of successful memes and these remain the definitive set of characteristics, and comprise fidelity (the qualities of the meme that enable it to be copied) fecundity (the rate or pattern of spread) and longevity (the duration of properties which are passed from mind to mind). The difficulty with memes is that they may undermine processes of education (whatever this may mean) as they are about breadth and not depth. It is not the quality of the idea that wins but the best fit and, as Bertrand Russell pointed out, the default position lies with the believer. As such memes can be considered problematic in that they propagate behaviours based upon our past survival rather than our future development. Godwin (2004) proposes that a form of 'memetic engineering' is an important component in contributing to the health of people's social and mental being. Godwin further proposes that once a harmful meme is located we have a social and moral responsibility to chase it down by releasing a positive counter-meme within the idea-stream. Knobel and Lankshea (2005) suggest that studying memetic engineering may well prove to be a fruitful component of classroom critical literacy approaches to understanding social power and influence.

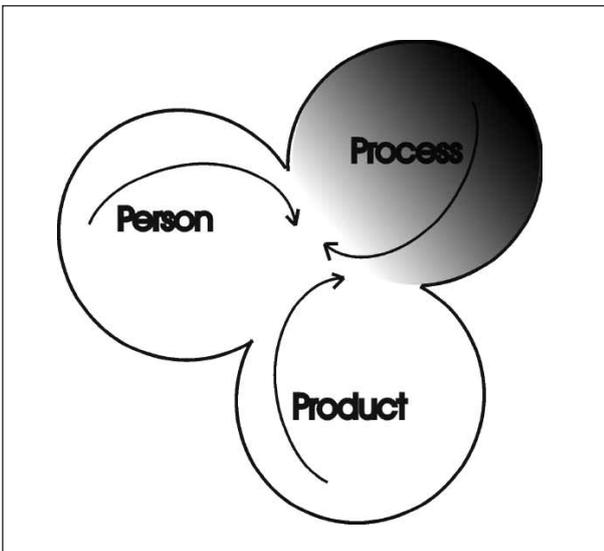
When considering the role of the designer it doesn't take long to consider them as powerful 'creators', 'propagators', 'changers' or 'enders' of memetic cultures and this will merely depend upon your location within the context .

To help contextualise memes further, Brodie (1995) asks why memetics and not just 'cultural evolution', 'behavioural psychology', 'sociobiology' or something else?

Still Thinking and Feeling: the location of emotion in the creative and learning experience (Part 2)

The breakthrough in memetics is in extending Darwinian evolutionary theory to culture and identifying that ideas spread not just because they are 'good ideas', but because they contain 'good memes'; such as danger, food and sex that push our evolutionary buttons and force us to pay attention to them. Memetics offers the theoretical study of this phenomena, and because of natural selection, fitter memes replicate more successfully in being communicated, 'infecting' a larger number of individuals or surviving for a longer time within the population through popularisation. The first step in Stanovich's rebellion is for the person to realise the true state of affairs and the implications on ourselves and societies and rethink such central concepts of folk psychology as the soul, the self, free will, and personal responsibility.

The key feature of the person phase, building upon previous concepts, is that central to a person's decision making and actions are a range of cognitive, emotional, cultural, memetic, pedagogical, psychological and neurobiological influences. The person stage provides creative opportunities to reconfigure our decision making but such practices have to be intimately linked with the process stage which I will now explore.



Process

Central to the process stage is a concern with how we learn and secondly what we learn both of which I believe have to be informed by an understanding of emotion. Hall (2005: 25) concluded that '[n]euroscience is confirming earlier psychological theories about the importance of emotional engagement in learning.' Yet, what is still lacking is a thorough understanding of how emotions can be dovetailed within teaching practices to enhance the quality of the student and teacher

experience. Although a slight deviation I do want to reflect for a moment about what children learn in Design and Technology as often we seem to have an 'anything goes' approach an 'all inclusive lest we upset someone' approach. Such inclusiveness comes from process led pedagogy and whilst it may have served us well to have an expanse that crosses from the arts to science, such breadth often means that we don't engage in the depth or rigour of process that may be desirable. What always astonishes me is that regardless of the potential breadth of process, the distilling into a set number of projects and activities, possibly through a process of memetics, seems to be unquestionably and consistently adopted across many schools. To this end I would propose that we consider, perhaps provocatively, what a set of measures or conditions might be that could be applied against any activity in the subject that would legitimise its inclusion in, or rejection from, the curriculum. Perhaps this is a challenge for this and future conferences – what three, five, ten measures would we apply? Millar (1996) has considered this in science education and although I am not aware of how successful this has or hasn't been, it would be an interesting exercise and challenge to carry out within the D&T community.

What we learn will always be constantly up for debate and as always in a shifting context. Knowledge however is no longer power and it is worth considering this within Ken Robinson's (2007) 'ecology of the mind' metaphor. Robinson suggests that we have traditionally mined our minds in the way we have mined the Earth's popular commodities often in an attempt to reproduce what we have always had (interestingly Robinson suggests that this, in the context of education, is in pursuit of the production of future professors). However we need to look beyond what has served us well and look at new disciplines to which he identifies creativity as a source of future mining.

Creative learning, a topic I have been researching (Spendlove 2005, Wyse and Spendlove 2007), may offer a different source of mining, whilst cognitive neuroscience, experimental psychology and sociocultural studies can all make a contribution to our understanding of good learning environments. A book by Robert Fulgham (1989) called *All I really need to know I learned in kindergarten* captures the essence of the argument that learning dispositions may be more significant than what and how. Such learning relies on the subconscious rather than conscious processing of information and in a recent paper Claxton (2007) has identified that cognitive neuroscientists now believe that our brains have evolved to make us disposed to learn by imitation (dare I suggest memes again). So-called 'mirror neurons' in the cortex

Still Thinking and Feeling: the location of emotion in the creative and learning experience (Part 2)

that automatically prime us to mimic what we see others doing. In other words we are subconsciously catching learning and if we have sufficient emotional attachment to that catching then the more effective that learning will be.

As usual Vygotsky (1978) had illustrated this earlier by suggesting habits of mind are contagious. Claxton indicates that if Vygotsky is right, that you pick up your mental habits from the people around you, then “we want young people to be around adults, and other students, who are themselves paragons of learning, rather than of knowing” (ibid.:128). Such learning is best evidenced in creative environments where there is a lack of certainty, a degree of risk and where the teacher models dispositions of how they learn and apply their learning whilst using metaphors analogies and anecdotes as emotional tools when teaching. All, I would suggest, are the antithesis of the focused practical task. Claxton further suggests that if we are genuinely interested in expanding learning capability: “we can ask how such an acquired intolerance for confusion can be prevented from developing, or how it can be reversed. What kind of school ethos, for example, would inculcate the healthy belief that hesitant and unclear knowing is a vital aspect of intelligence?” (p118).

“Expanding the capacity to learn means establishing cultures in which there are genuine feelings of ‘enfranchisement and entitlement’. In such environments, learners’ questions are welcomed, discussed and refined, so the disposition to question becomes stronger – more and more robust; broader – more and more evident across different domains; and deeper – more and more flexible and sophisticated” (ibid.:120). To me this is the embodiment of a creative, learning and designerly experience underpinned by both an emotional attachment for the learner and an emotional security to be willing to engage in such uncertainty.

Identification of uncertainty and risk remain a consistent feature in almost all the literature relating to creativity as they are considered to be paramount in a creative experience – but how does the brain deal with such uncertainty, anxiety and risk? Throughout this, and part one of this paper the brain’s subconscious processing has been referred to as essential for survival as it will always resort to this default state when there is a sense of fear or anxiety. Unfortunately within design education the conditions that we operate under are very close to these areas as often we require children to work in very uncertain and risky ways creating acetylcholine in the brain which creates that unpleasant feeling of not knowing how to proceed. In such situations the amygdala which is responsible for the ‘fight or flight’ syndrome within the

brain can override the thinking part of the brain resulting in a lack of creative response as it struggles to regain a sense of certainty. I would therefore argue that within the learning and designing environment there has to be a strong sense of trust between the teacher and pupils and this sense of trust creates a chemical in the brain known as oxytocin. The stronger the indicator of trust, the more the oxytocin increases and when this is observed by others trust can increase throughout members of a group – so your group will either all (or at least mostly) be with you or mostly against you.

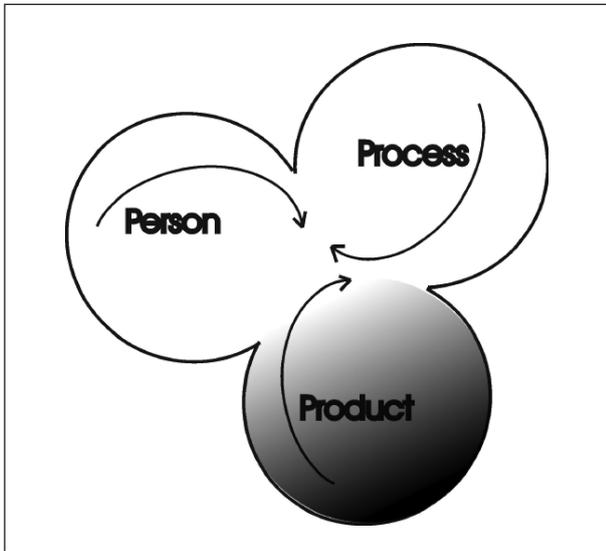
The neurobiological mechanisms that permit human beings to trust each other are not fully understood but within the context of this paper the concept of trust is easily viewed between a variety of actors: teacher and pupil, teacher and teacher, designer and client and so on. What has been found is that when someone observes that another person trusts them oxytocin circulation increases in the brain and the body. The stronger the indicator of trust, the more the oxytocin increases. What is more, if from this sense of trust comes a sense of success then the brain creates dopamine as part of its reward system – making you feel good. These chemical reactions in the brain can also be considered as the emotions and feelings we have and neurobiology is now beginning to shed some light on these phenomena adding to the psychological concept of ‘flow’ (Csikszentmihalyi, 1997).

It is my view that in relation to the process stage children must be taught the basis of how they learn. As part of that teaching I feel it is essential that they are encouraged to consider their feelings/emotions relative to a task and to understand that anxiety/uncertainty/lack of control of one’s thinking is a natural feature of creative activity and is something experienced by everyone.

Product

The final phase of the triadic schema locates emotion in the product stage. As with the previous domains I have given this area attention in previous publications highlighting the wider acknowledgement, awareness and recognition of emotion within the professional world of design including: the emotional dimension (Thackara, 2005), emotional ergonomics (Seymour & Powell, 2003), emotional usability (Leder, Benno, Oeberst, & Augustin, 2004), aesthetic emotion (Kim & Yun Moon, 1989), emotional products (Demirbilek, 2003), emotional design (Norman, 2004) and Kansei Engineering (Schutte and Eklund 2005) which is a method for translating feelings and impressions into product parameters.

Still Thinking and Feeling: the location of emotion in the creative and learning experience (Part 2)



Within this stage of the schema I want to discuss the location of emotion within the designer and how designers are themselves emotional products of their social cultural, emotional and memetic experiences. I then want to look at the more commonly discussed area of emotion in the design of products.

Within the product stage however, we almost have to adopt a critical schizophrenia 'dualism'. On the one hand we all enjoy great products – it is part of our currency and the emotions of joy, happiness and sensuality that a new product can create; this pleasurable experience is not to be overlooked. However on the other hand we have to be critical of the manipulation of those emotions as part of designer, advertising and marketing strategies and this exemplifies the difficulty we have when educating learners. We are educating them to be both emotionally critical of the products around them whilst also trying to educate them to seduce the user's emotions, as designers, at a variety of levels who wins?



Figure 2. Car control panel.

A good reference for looking at emotion in design is Don Norman who is particularly interested in the emotions that products generate in the user. For instance in this example (Figure. 2) what do any of the symbols mean? The brain goes into a state of paralysis when trying to distinguish what the various buttons could do particularly when, perhaps, driving at high speed. Such poor design is not only emotionally discomforting but is also a significant cause of human error leading to the potential loss of life.

However, the emotional opposite of this are designs which generate a sense of occasion; that have a calming reassurance about them, for example the Google logo which is a welcoming and comforting sign which also provides a sense of occasion by changing for special events and celebrations. All products are not however meant to be emotionally reassuring and at times emotions are deliberately disturbed by designs which may want you to reconceptualise your thinking through provocative head turning designs. I believe Norman's work provides real opportunities for an entry level approach to emotion in Design and Technology however I want to consider the location of emotion from a different perspective, the concept of designers as propagators of memes.

Stanovich (2004) gives the example of buying a branded product that is 50% more expensive than an unbranded, but an identical product. This is an example of memes promoting a product as having greater worth than its true value. A good example of this is Philippe Starck's lemon squeeze (Juicy Salif) a product that has so-far sold over 550,000 units, at a steady rate of 50,000 a year since its launch in 1990, but which fails to work (which I appreciate is worth discussing further) yet has captured the 'designer' public's imagination. Indeed, the term 'designer' given to a product, as in 'designer spectacles' or 'designer clothes' gives products a memetic impetus. Of course, many of these memes are perpetuated by individuals or organisations whose interests they serve – why not charge twice the price?

Brodie (1995) takes the concept further. Read a newspaper? Catch a mind virus. Listen to the radio? Catch a mind virus. Hang out with your friends and shoot the breeze about nothing in particular? Catch one mind virus after another. What brand of soft drink do you buy? The ones that sell the most, cost twice as much as unadvertised store brands. The extra money goes into television advertising, sending out the spores of ever more penetrating mind viruses that literally take control of your mind and make you push your shopping cart over to their shelf; successfully programming your mind to believe that you prefer that brand over a cheaper brand. The meme

Still Thinking and Feeling: the location of emotion in the creative and learning experience (Part 2)

responsible has been intentionally perpetuated by the advertising industry and only through reflective thought can the analytic system discern the good memes from the bad. Such memes are however highly powerful, driven by our emotions and connected with our feelings and perpetuate the myth that buying a product endorsed by a celebrity will make you 'just like them'. Such is the power of memes that the entire fashion and design industry depends upon designer meme propagation.

Therefore the idea of the natural evolution of ideas and designs may be a limited one. According to Dennett (1990) it is often considered that ideas evolve naturally into their successors where the best ideas win based on the basis of the survival of the fittest "which ruthlessly winnows out the banal, the unimaginative, the false. Few ideas are more hackneyed – or more abused; almost no one writing about the evolution of ideas or cultural evolution treats the underlying Darwinian ideas with the care they deserve" (p127). Therefore the evolution of ideas is not the survival of the best or fittest but the right one at the right time: hot pants, new romantics, punk, pop, modernism are all examples of the right place at the right time but at a different time without a memetic impetus they would not have cloned. Such a process I have conceived as an emotionally driven, meme propagating designer conduit loop. A lot of this will depend upon your view of designers and ultimately how powerful you conceive that they are, but much design is merely of the replicator type and in schools much of the design, where it actually takes place, is of the kind that reinforces rather than breaks the memetic of the particular culture. Ultimately designers propagate memes in response to their social cultural and emotional beliefs.

As goes the saying: 'man is not in control, but the man who knows he is not in control is more in control'. To this we can add designers are not in control but the designer who knows he is not in control is more in control. This theory ties in with Feenberg's and Feng's (2006) critical theory of the designer. They question the extent that the designer is engaged in a purposeful activity and the extent to which designers shape products:

Design is typically conceived of as a purposeful activity, and so intentionality seems built into the very definition of the term. But is design really intentional? Or, put another way, to what extent do designers' intentions shape the products they produce?

Design is not only a strategic contest between certain actors or social groups, but also a function of the way in which things appear "natural" to the designer (p.130).

To this I would add the concept of emotional impetus to the social and cultural shaping of designer's intentions.

Conclusion

Dawkins ends 'The Selfish Gene' with the following:

We have the power to defy the selfish genes of our birth and, if necessary, the selfish memes of our indoctrination.... We are built as gene machines and cultured as meme machines, but we have the power to turn against our creators. We, alone on earth, can rebel against the tyranny of the selfish replicators (p.215.)

Stanovich equally uses powerful and provocative language by suggesting we may be able to find an escape hatch from "hideous fatalism". Although both Stanovich and Dawkins can be considered as playing to the galleries they both identify decoupling our emotions in pursuit of creative alternatives as a way forward for society.

With the threat of a nuclear holocaust America funded one of the largest 'creativity' research programmes to identify and promote creativity as creative individuals would be needed to rebuild a future unknown society. It is my contention that creativity, learning and emotion go hand in hand and although the threat of a holocaust may have diminished, creativity and our emotions remain both the key to our survival and downfall.

Whether or not memes exist remains a matter of philosophical and empirical enquiry however they remain useful as a metaphor for explaining cultural differences and the acceptance and rejection of creative ideas. As such, creativity is informed and shaped by our emotions and provides us with choices over the shaping of our future. Given the information presented today those choices may not be as transparent as we may at first have conceived – and I don't suggest the task of unravelling the complexity is an easy one.

In these two papers I have attempted to give an overview of what I believe to be an exciting, largely neglected, yet complex field for design and technology education (in fact all education) to consider. In most areas I have only scratched the surface of what are potentially rich opportunities. However, in the world of schooling, and I deliberately make a distinction between schooling and education, where answers are required yesterday and neat packaging is all important I am not optimistic that such rich discussions will take place.

The 'bottom line' is therefore threefold. Firstly, learners need to somehow understand how their emotions

Still Thinking and Feeling: the location of emotion in the creative and learning experience (Part 2)

influence their thinking and behaviour and if they are engaged in creative practices; an appreciation for and underpinning of the complex emotions relating to the creative process, including uncertainty and risk taking, needs to be accommodated.

Secondly, it is my belief that learners should be able to recognise and critique their emotions and how these emotions are manipulated in the designed and made world (including the social, political and media world) and that learner's and educators should be encouraged and enabled to recognise stimulating and emotionally engaging learning contexts for developing appropriate learning dispositions.

Finally all learners should understand the implication of their emotionally informed decisions and the influence of these decisions on other people's emotions through the designed and made world.

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David.Spendlove@manchester.ac.uk