

## **Summary report of Emotions, Learning and Education Meeting 8-9 November, Copenhagen, Denmark**

As there are 34 000 classified emotions<sup>1</sup>, the question arises as to how are teachers supposed to recognise and deal with the emotional states of their students, when most of the time the students don't even know what they are feeling themselves. Classrooms are seen as frustrating environments for teachers and students alike. Not only are there external classroom disruptions, but internal attention is diverted and this does not help students to be in an optimum emotional state to learn. Is it possible to develop a coherent framework for dealing with emotions that does not produce confusion?

An OECD-CERI meeting on the subject of Emotions, Learning and Education took place on November 8 and 9<sup>th</sup> 2004, in collaboration with (and hosted by) the Learning Lab Denmark, at the Carlsberg Academy, situated in Copenhagen. This meeting was attended by forty experts ranging from the neuroscientific to the education field (included practitioners).

Hans Siggaard Jensen, the Executive Research Director to the Learning Lab Denmark, drew on Pierre Bourdieu's sociology of culture – which contends that the struggle for social recognition is a fundamental dimension of all social life – to describe the needs of today's society in three words "Education, Education, Education", which resounds loudly in many countries, especially Denmark, where education is seen as paramount to attainment and achievement. The amount of education one receives even correlates to life expectancy. It has statistically been confirmed that people with higher education are more resistant to the onset of neuro-degenerative diseases, and that continued education helps to maintain a healthy functioning brain.

The main synergy of the meeting took place in four workshops under the themes: Training emotional competencies; Motivation and learning with a brain perspective; Environment, sociality, emotions and learning; and Emotions in education: stress and mastery. The brainstorming focused on different questions (such as how to remedy the collective emotionally distraught brain state that is inhibiting learning in the classroom today) by exploring: the best ways of putting the current knowledge of emotions into use in a learning environment, and methods of teaching the management of emotions (by reflecting and acting on one's own feelings, as well as the feelings of others).

Communication was deemed necessary firstly to encourage the expression and acknowledgement of emotions as a primary step to gaining control over the emotional state. One has to be taught to recognise the emotional state one is in before it is possible to gain control. It is important not only to recognise an emotion one is experiencing but to try to find the proper pairing of positive/negative emotion so as to evoke the opposite feeling as an antidote. Non-violent communication techniques were demonstrated at the meeting, as well as how to gain the upper hand over your emotions through regulated breathing. It was noted that such programs for the management of emotions should be communicated, encouraged and adopted by the entire teaching body, from janitors to teachers and students – i.e. everybody involved in the whole school environment – in order to transform any negative factors in the environment prone to blocking the brain thereby creating a brain-friendly environment conducive to learning.

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<sup>1</sup> From the keynote presentation: "Emotional Literacy improvements in the UK gained from the ExPRESS Project", by Alan Watkins, Cardiac Coherence, Ltd. ; UK.

In the first CERI meeting held on the theme of emotions, which took place in December 2003, the importance of the role of the amygdala was stressed: how fear and negative emotion “recruits” the amygdala, causing an immediate shut down of other parts the brain, i.e. inhibiting a large part of the cortex, thus making it impossible to learn properly. In Copenhagen, the emphasis was more on the importance of the pre-frontal cortex: how this area of the brain only reaches maturity around the third decade of life, and how important it is to keep the pre-frontal cortex liberated as much as possible, and unfettered from negative emotions, in order for optimum learning to take place.

The question arose as to whether adolescents are already able to find their own way in the diversity of knowledge domains. Adolescence is a crucial period with regards to the brain and emotions, due especially to a surge of sex hormones that modulate brain changes. This meeting considered that communication at this delicate phase of life is very important. It was stressed that not only good teachers but also parents – as “external motivators” – should be reconsidered in a positive way. The education system should review new strategies, and explore other learning situations to cater for the adolescent students needs. Communicating new learning attitudes to this group should be thought through to dispel the idea that learning is for nerds. Whether gender differences could illuminate adolescent specific learning was also reflected upon. The area of adolescence, however, remains fuzzy, as there are not enough brain studies undertaken so far; it was suggested that more evidence based research would be timely.

The meeting also explored motivational processes, learning attitudes and curiosity. Brain curiosity is not stimulated and more often put down in current school systems. Finding the intrinsic or internal motivation that lurks deeply within each individual was suggested as the key to unlocking effective learning. When one is engaged in something that one really likes, this can be seen in brain scans as having the same pattern as when having other hedonistic experiences. Understanding is an important intrinsic motivational factor. <sup>2</sup>

Several other ways of promoting positive emotions through communication were put forward in the different workshops: the use of external props such as puppets to dissipate inhibitions, help transfer emotions and encourage students and teachers to open up to each other; communicating through play, the body and sport; observational learning from peers; and, learning from oneself. A study showing that subjects learn aversive responses more quickly and that these are subsequently very hard to unlearn, left much food for thought.

Lastly the meeting emphasised the importance of neuroscientists communicating with the education sector by constructing transdisciplinary studies that will have relevance and importance for day-to-day life-long learning. More research needs to be undertaken by observing the “naked” brain (i.e. unfettered by hard-wired brain scanning technology equipment) in action in natural settings in order to explore emotions, and the emergence of a social neuroscience was seen as a positive step into the future.

The challenge that lies ahead is that, given what we know about cognition and emotional learning of the brain, we now need to undertake appropriate, ecologically valid learning measures that

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<sup>2</sup> We have all experienced the sudden moment of insight when all the pieces fall into place in the pattern, when you have the urge to cry out “Aha”. However, neuroscience does not yet have much to say about the “Aha” experience. As a novice within a given field one usually starts with the acquisition of facts and gradually moves towards understanding. We know relatively little (disregarding chess players) about the cognitive differences between experts and novices.

have relevance for day-to-day learning in order to establish an emotionally sound learning environment.