Affective Learning: Principles, Technologies, Practice

Panagiotis Bamidis (Assoc. Prof. in the Lab of Medical Physics, Medical School of the Aristotle University of Thessaloniki, Greece)

Although the issues around emotions and learning are not new, the term affective learning has only recently been defined as the learning that relates to the learner's interests, attitudes, and motivations. In the digital age we live though, affective learning is destined to be technology driven or at least enhanced. Having overemphasised the cognitive and relatively neglecting the affective dimension in the past, technology enhanced learning is now enforced by new neuroscience findings that confirmed that affect is complexly intertwined with thinking, and performing important functions that may guide rational behaviour, assist memory retrieval, support decision-making and enhance creativity. To cope with personalised learning experiences in such models of learners though, intelligent tutoring systems must now contain "emotion, affect and context", in analogy to successful human tutors. However, measuring and modelling learners' emotional and affective states remains a difficult task, especially when real-time interactions are envisaged. In this paper, the concept of affective learning is furnished with case studies where the roles of technologies, neuroscience, learning and education are interwoven. Medical education is borrowed as a domain of reference. Neuroscientific emphasis is placed in the synergy of two perspectives, namely, the detection and recording of emotions from humans and ways to facilitate their elicitation and their subsequent exploitation in the decision-making process. The paper concludes with a visionary use case towards affective facilitation of training against medical errors and decision making by intelligent, self-regulated systems that could exploit scenario based learning to augment medical minds for tomorrow's doctors.

INSTITUTE OF
INTELLIGENT SYSTEMS