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Using social technologies to support interdisciplinary collaboration: The experience of the xDelia project

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The important research problems in technology enhanced learning are interdisciplinary. So what can working in an interdisciplinary manner bring to multidiscipline research teams? Recent developments in technology have profoundly influenced the ways in which people communicate, collaborate and network and this offers both challenges and opportunities. In this presentation we will review the literature on the challenges and benefits of interdisciplinary working and present a case study of our work to date on the xDelia (Xcellence in Decision-making through Enhanced Learning in Immersive Applications) project to illustrate how some of these challenges are manifested in a distributed interdisciplinary project, and demonstrate some of the techniques that can be used to address them.

The xDelia project looks at the use of wearable sensors and serious games to explore the effects of emotional regulation in financial decision making. Three target audiences are involved, traders, investors or members of the public understanding finance. Researchers in institutions across Europe with expertise in financial decision making, games design, cognitive science, bio-sensor technologies and educational technology are collaborating in a shared endeavour not only to understand the role that emotions play in financial decision making, but also to use a combination of serious games and bio-sensor feedback to address the negative impact of emotions on financial decisions.

To conduct effective research, the xDelia project partners need to work together as a coherent group. It is not sufficient for each disciplinary team to work in isolation, instead they need to collaborate in a true sense, contributing to shared activities in order to achieve a common goal. In practical terms, this involves partners from different institutions taking an active role in the planning, execution and analysis of the studies and learning about the each others' disciplines and research techniques. However researchers from distinct disciplinary backgrounds are accustomed to working in different 'interpretive spaces' (Knell and Oakley, 2007), using distinct and sometimes contradictory methodologies. Aligning these perspectives and is a notoriously difficult undertaking (Nissani, 1997 p212). The xDelia project has developed methods to meet these challenges, helping partners achieve a shared understanding of their common goals and of ways of working that cross the disciplinary boundaries and make optimum use of the different research teams' expertise and knowledge.

Web 2.0 social software such as wikis and blogs have been suggested as potential sites for interdisciplinary knowledge creation (Knell and Oakley, 2007, Peters et al., 2008). Hoadley and Pea (2002) propose wikis and blogs as candidate technologies because they provide access not only to information but also to knowledge by connecting people to people rather than just to facts. The project has therefore integrated a range of collaborative Web 2.0 technologies into its research practice. These include a semantic Wiki for inter-project knowledge sharing and scheduling, doodlepoll for scheduling, dropbox for asynchronous collaboration and knowledge creation, web conferencing for synchronous brainstorming, knowledge creation and knowledge sharing, blogs for within-team communication and knowledge creation, google wave for synchronous brainstorming and knowledge creation, Google Docs interdisciplinary collaboration and knowledge creation, Twitter & Cloudworks for knowledge sharing and external engagement. We are collecting data on the impact of these strategies on the collaborative processes of the xDelia project throughout its 3 year duration. Our findings identify factors that need to be taken into account when incorporating Web 2.0 collaborative technologies into a project, and we shall present techniques that work well alongside those that are less successful at supporting interdisciplinarity.

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