Innovative Research in Virtual Worlds 2011 Conference

Abstract Submission

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Abstract title	**Metaxis: the transition between worlds and the consequences for education**

Full abstract (up to 1000 words)	*This presentation fits in the "pedagogical design" theme.*
	Metaxis (or metaxy) is the word used by Plato to describe the condition of "in-betweenness" that is one of the characteristics of being human. In particular, Plato applied it to spirituality, describing its location as being between the human and the divine. Whelan (2008) expands the notion of metaxis further, claiming that "...we humans are suspended on a web of polarities--the one and the many, eternity and time, freedom and fate, instinct and intellect, risk and safety, love and hate, to name but a few". Metaxis has also been defined as the state of belonging completely and simultaneously to two different autonomous worlds (Linds 2006). So, the notion of humans passing through an interface between the world of ideas and the physical world is over 2,000 years old. This paper will argue that the advent of virtual worlds has provided another interface we can now inhabit; that between the virtual and the real. And, particularly, that the notion of in-betweenness becomes significant when virtual worlds are used for education through simulations of real life experiences and activities. Simulations have long been recognised as an effective means of education, training and updating, from classroom role play in a variety of subjects (see, for example, Aubusson et al 1997) to full technological simulations of complex and high-risk activities such as flying an aeroplane. The development of virtual worlds now enables the creation of easily-constructed and affordable simulated physical environments and social situations, in which students can take part in a way that mimics their likely activities in the real world once qualified. This affords particular benefits when those environments and/or situations are unethical, dangerous or impractical to experience pre-qualification. If learning about the real world can be simulated in the virtual world, the transferability between learning in the real world and learning in virtual worlds (or "learning permeability" of the interfaces between virtual worlds and the real world), becomes a significant issue. *The presentation aims to explore these themes, and will include empirical findings of an evaluation of an accident investigation simulation and a risk assessment simulation undertaken by postgraduate students in a virtual world. The evaluation included an assessment of the students' immersive tendencies (Witmer & Singer 1998) to investigate possible associations between the "learning permeability" of the interface experienced by students and their innate tendency to immerse in virtual activities. The evaluation was carried out by application of the immersive tendencies questionnaire at the beginning of the module, and a questionnaire and cafe-style focus group at its conclusion. The conclusion questionnaire tested the construct of the students' opinions of their learning outcomes in relation to the virtual world exercises, together with feedback on their experiences and prior expertise in the use of IT. The cafe-style focus groups concentrated on wider issues of their learning in the module as a whole. The evaluation data was analysed using non-parametric statistical methods for the learning outcome construct, as this was tested using Likert scales. The experiences part of the questionnaire and the outcomes of the focus groups were analysed using descriptive statistics. Two of the major findings of the analysis are as follows:* • *The students' immersive tendencies were better predictors for positive learning outcomes than their proficiency with IT,* • *The students responded very positively to the effectiveness and*

ease of transferring learning between the physical world and the virtual world.

As an example of the relevance of the interface between real and virtual worlds, in order to carry out the accident investigation and risk assessment exercises fully, students needed to:

- *take what they had learned about risk, accident causation theory, inspection and interviewing techniques from the real world*
- *apply that knowledge and understanding of the theory during the investigation exercise in the virtual world,*
- *take what they found from the virtual world and apply analysis techniques in the real world,*
- *as a result of that analysis, go back into the virtual world to further investigate, and*
- *come back into the real world to write reports, discuss the accident and its causes and reflect upon what consequential action they would take.*

The presentation will also concentrate upon the potential that virtual world simulation has in developing new teaching and learning approaches, and the impact those developments may have upon the notions of location that are currently so influential in Higher Education; the idea of "distance" education, for example. Although it has long been recognised that it is the transactional distance that is most important in effective teaching and learning rather than the physical distance, modes of learning still tend to be described by the students' physical location. Virtual worlds may turn that notion around.

References
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