

ECGBL 2007

European Conference on Games Based Learning

University of Paisley, Scotland
25-26 October 2007

Keynote presentation: Serious Games: A Human-Centred Approach to Delivering Meaningful Tools for Learning

"Serious Games", we are told, represents a global revolution in interactive 3D technology that promises to develop intuitive, affordable, accessible and familiar training environments for a wide range of educational and training applications, from medicine and healthcare to defence training for urban and special operations combat; from national heritage to multi-cultural interaction. But haven't we been here before? Didn't we see an almost identical scenario played out in the 1990s? Then it was called Virtual Reality, or VR - once described as "the most significant technological breakthrough since the invention of television". VR was popularised by a myriad of technologies - head-mounted displays, instrumented gloves and motion capture suits, multi-screen rooms or "CAVEs". By the end of the 20th Century, VR would help us to abandon the keyboard, mouse, joystick and computer monitor in favour of interfaces exploiting the skills we were born with. We would all interact naturally with virtual objects and people whilst "immersed" within a multi-sensory, 3D computer-generated world.

As we now know, this brave new world simply did not happen. Despite sizeable early investment, national initiatives, expensive (and unexploited) international collaborative projects and the widespread launch of centres of academic excellence, VR delivered very little of use to the global IT community. A handful of organisations actually adopted VR, but most were simply scared off by its complexity and cost. The VR supply companies have either passed away or are hanging on by a thread and academic centres have closed or are fast becoming expensive technology museums. And the biggest mistake made by the VR community was that it completely forgot the human factor - the needs, capabilities and limitations of its end users. We are, today, still using keyboards, mice and conventional computer displays.

This keynote presentation will briefly review the emergence of serious gaming, drawing attention in particular, attention to the importance of learning the harsh lessons of the Virtual Reality "era". Recent and ongoing UK serious gaming case studies - many of which will be described in this presentation - are delivering successful proof-of-concept demonstrators to a variety of stakeholders, illustrating the value of incorporating human-centred knowledge into the early project design stages. The examples to be presented include part-task trainers for close-range naval weapons procedures, submarine safety systems awareness, defence mental health therapy support, explosive ordnance disposal and marine archaeology (the Virtual Scylla artificial reef initiative - virtualscylla.org).

Prof. Bob Stone

Bob Stone holds a Chair in Interactive Multimedia Systems at the University of Birmingham, UK, where he is the Director of the Human Interface Technologies Team. He also currently holds the position of Royal Academy of Engineering Visiting Professor in Integrated Systems Design at the University of Plymouth. In 1996, he became an Academician of the Russian International Higher Education Academy of Sciences (Moscow). Bob's ergonomics career has taken him from human factors research in defence and offshore applications, through a period of developing telepresence interfaces as part of the UK's National Advanced Robotics Research Initiative in the 1980s, to the world's first industrial Virtual Reality development programme in the 1990s. He is currently involved in researching the human factors aspects of interactive 3D and serious gaming, with regular contributions to projects in the fields of defence, surgery/healthcare and cultural heritage. Bob is also the Research Director of the UK's Defence Technology Centre for Human Factors Integration.