Blended Spaces for Collaborative Creativity

Professor David Benyon

Centre for interaction Design
Edinburgh Napier University, UK
Focus

• Developing mixed reality, multi-touch environments for creative collaboration

• The Interactive Collaborative Environment (ICE) at our University

• Applications for chip manufacture, compositing, brainstorming, control.

• Consultancy on room-based environments.
The ICE
Creative hub for advertising agency
Tabletop museum app
Overriding idea is of Blended Spaces

- More than just mixing realities
- Blended spaces have a coherence and their own properties
- These are emergent properties of a new kind of space
- Spaces that deliver layers of experiences.
Mixed Realities

- Real Environment
- Augmented Reality (AR)
- Augmented Virtuality (AV)
- Virtual Environment

Physical space

- Atoms

Information space (or digital space)

- Bits
What are these spaces like?

- Physical space - with real world physics!
- Information (digital) space - with multimedia content
- Both spaces consist of objects, laid out in some way, including technologies (materials) to mediate interaction
- In both spaces people navigate, make meanings and have feelings
Blending Theory (from Fauconnier and Turner)

Figure 5.8 Generic space and Blended space (based on Imaz and Benyon, 2006)
Describing Spaces

- Ontology - what objects are in the space, their types and instances, the size of the space?
- Topology - how the objects are related, giving distance and direction?
- Volatility - how often the objects change?
- Media - what technologies or materials are supported in the space?
- Agents - are there artificial or real people in the space?
Being in Spaces

- Spaces and places are media: environments in which we act and shape the media itself
- People engage in activities in spaces
- People step back and reflect in spaces
- People act on objects through the interfacing media and technologies
- People are present in blended space
The ICE as a blended space

- Physical space = empty office, boardroom table, high stools, electronic whiteboards
- Digital space = PyMT (Kivy), windows 7, 8, TUIO interface, integrates iPads, etc.
- Conceptual space = understanding what’s possible, relationships between zones, etc.
Methodology

- Identify and understand purpose
- Examine current practice
- Determine project constraints
- Determine the appropriate technologies for the space
- Model and map the spaces developing the correspondences between physical and digital
Blended Spaces - the bigger picture

- People will be living in and moving through in blended spaces
- They will be present in blended spaces
- People have implants and experience new sensations directly
- People will form relationships with agents, not simply interact
- New theories of presence, blended space and embodied and embedded interaction are required