

'Hybrid' digital-material networked learning - scruffy mongrel or sleek new breed?



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Practices and implications of blending physical and digital resources for learning in HE

'Hybrid' learning refers to objects and practices which combine digital and material elements (Knutsen et al, 2011) in ways which may be of value in the context of networked learning. We are seeing the emergence of networked learning resources that go beyond the purely digital (such as blogs, forums and wikis) but which connect the digital with the physical or material world and can be linked together at a distance or accessed remotely by students.

Technological and pedagogical change in areas such as holographic projection, 3D printing, ubiquitous computing and the internet of things and the blurring of boundaries between the digital and material worlds may hold the potential for radical innovation in STEM education. However, these 'hybrid' learning practices have not been extensively studied. This project aims to address that gap using recent ideas about socio-technical information networks and address the question 'Is 'hybrid' learning a scruffy mongrel of mixed technologies and pedagogies, or a sleek new breed of learning?'

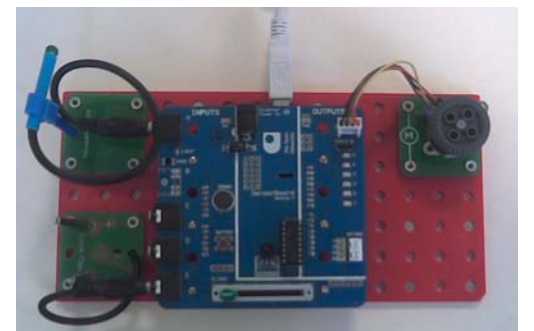
Examples

- the SenseBoard in TU100 *My Digital Life*; both physical and digital, the SenseBoard microprocessor, is used in conjunction with a computer network to share data with other students as part of the learning experience.
- experiments in the Wolfson Open Science Laboratory that blend the material and the digital over a network, such as the Biological Oxygen Demand networked experiment
- the PIRATE project - the use of a remote telescope by a group of students through a computer interface over a network;
- the Enabling Remote Activity project, where students interact remotely with a field site over a network



What we aim to do:

- Carry out a systematic literature review of science, technology and engineering education practices
- Produce four case studies from within the Open University including interviews with module teams
- Invite educators from other institutions to contribute their experiences



Issues to be addressed include:

- the range and variety of 'hybrid' learning experiences and the learning contexts in which they are used,
- the stage of technological development and the skills and resources required both by educators and students,
- underlying theories of learning in the hybrid learning experiences

What we hope to discover

The project is exploratory and it is probably too early to expect to identify 'best practice' but we hope to:

- identify emerging issues and opportunities in the literature;
- demonstrate issues through a series of case studies
- produce an initial framework for thinking about them.

Knutsen, J., Martinussen, E. S., Arnall, T., & Morrison, A. (2011). Investigating an "Internet of Hybrid Products": Assembling Products, Interactions, Services, and Networks through Design. *Computers and Composition*, 28(3), 195–204.