

The ubiquitous learning space

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The past number of years has seen the growth in popularity of ubiquitous technologies, including, but not restricted to PDAs, mobile phones and sensor networks. Our conviction is that these current, and emerging, technologies have valuable potential to support the learning needs of an expanding heterogeneous and mobile society. We are moving from a paradigm in which the computer is a tool embodied in a device to one in which the computer creates an environment which assists the individual in context.

One example of this shift is ad-hoc peer-to-peer networks. This is a communication infrastructure (e.g. Mobile Phone, Bluetooth, Wi-Fi etc.) that allows users to maintain connectivity in a *decentralized* manner, often using a wireless radio network. In this manner information is available to everyone in the network, simply determined by their location. They can join and leave the networked community at a time and place of their choosing.

At the London Knowledge Lab, in collaboration with Media Lab Europe, we are involved in creating next-generation ubiquitous devices. A simple exemplar of this is the iBand. iBand is a technology-enhanced bracelet that can store, display, and exchange information about you. Information exchange occurs peer-to-peer and only during a one-to-one focused interaction: when two people shake hands.

We are exploring the challenges and implications of the upcoming networked spaces for learning. One significant problem is that of information overload. In terms of learning, we will need to design tools and applications that mediate between the information-filled space and the learner. With iBand, for example, information is managed by augment the handshake and synchronising the collected information to your contact management software. As we design and build more complex learning tools, the information issue becomes more pressing.

We take it as read that in order to support knowledge construction – that is, meaningful and intentional learning within a knowledge domain – we will need to find ways to harness the affordances of ubiquitous technologies, rather than merely recapitulating the pedagogies and curricula of static technologies i.e. simply adapting scenarios and applications designed for the desktop to ubiquitous space. However, to do this raises a number of challenges. First, we will need to understand the sometimes subtle ways in which knowledge is transformed by the technology: information on a mobile phone is simply *not* the same information. Second, we cannot rely on traditional learning activities but must focus on posing new problems and appropriate ways of solving them. Developing the right activity structures that connect with the technologies – and with the knowledge to be learned – is paramount. Third, we will need to find ways to build, both at an architectural and a practical level, tools and applications that encourage the formation of communities that *proactively assist* learning, rather than a blind belief in the community itself.