

Exploring sociotechnical theories of learning technology

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Introduction

Research into learning technology has often been criticised for being mechanistic (e.g. Laurillard, 2005), with a technological determinism implicit in many of the assumptions about the relationships between people, technology and learning. More recent research has begun to recognise the social elements of technology, as in the emphasis on the learner perspective (e.g. Hardy & Bates, 2009) which provides a highly important, though incomplete corrective to technology-centred views of the learning experience. However there are traditions of studying technology generally, and information and communications technology in particular, which view it as the outcome, rather than the instigator, of complex interactions between people and the material world (Law and Hassard, 1999). These traditions include social informatics (Kling, 2000), social shaping of technology (Mackenzie & Wacjman, 1999), soft systems (Checkland & Holwell, 1998), sociotechnical systems (Trist & Bamforth, 1951) and others. They have yielded a rich heritage of 'mid-range' theories and concepts which, we suggest, have been under-utilised in studies of learning technology. Further, this lack of consideration of the interaction between social agency and learning artefacts has frequently resulted in stark discrepancies between the claims made about the potential of particular technologies and the subsequent realities of their use, particularly in a learning context (e.g. Selwyn, 2007). Learning theories themselves have been small in scope, looking at changes within and between individuals, whereas learning with technology is associated with changes of increasingly large scope, in organisations and in society in general, and impacting on more individuals, engaged in formal and informal learning. The increased scope makes the impact of unrealistic claims even greater.

The aim of this symposium is to highlight these theoretical traditions and to instigate discussion around their potential contribution to research and practice in learning technology and networked learning. By addressing theories for research alongside impact on practice, it draws together two of the main conference themes. The format of the symposium will be short presentations of each paper, followed by a round table discussion of the issues raised and possible ways forward in developing sociotechnical perspectives on networked learning.

The four papers, listed below, illustrate the application and significance of distinct sociotechnical perspectives to cases of learning technology and consider their potential future relevance.

1. Creanor, L. & Walker, S., *Interpreting Complexity: a case for the sociotechnical interaction framework as an analytical lens for learning technology research*
2. Bell, F., *Network theories for technology-enabled learning and social change: what do Connectivism and Actor Network Theory have to say to each other?*
3. Bissell, C., *The social construction of educational technology through the use of proprietary software*
4. Kear, K., *Social presence in online learning communities*

The first paper (Creanor & Walker) sets the scene by outlining the case for sociotechnical theories and providing an illustrative example, drawing on the social informatics literature and the concept of the sociotechnical interaction network. In the second paper (Bell) compares and critiques connectivism and actor network theory in to explore how they might help a range of stakeholders to understand change and make plans for taking action in a fluid context. Paper three (Bissell) addresses the issue of technological determinism directly by making the case for the social construction of educational technology by users and teachers. Finally, paper four (Kear)

focuses on the concept of social presence and how it is influenced by the behaviour and interactions of participants, as well as by the characteristics of the communication medium

This will form the basis of a discussion organised around the following questions:

- Can, and if so how, can sociotechnical theories inform and enrich our understanding of the complexity of the relationships between ICT and both formal and informal learning?
- What are the particular strengths and weaknesses in the differing formulations the papers offer of the relationship between the technical and the social, in particular as they relate to learning technologies?
- Do such approaches help us to consider the changing scope of learning with technology?

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