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Emergent Characteristics of Complex Learning Communities

In response to the rapidly changing demands of the Information Society, learning has undergone radical change, becoming a true lifelong activity with emphasis on situated, communal learning and flexible delivery designed to meet individual learning styles and increasingly underpinned by technology.

Two significant types of Learning Community (LC) which have evolved to facilitate timely knowledge generation are corporate Communities of Practice (CoPs) (Wenger et al 2002) and Virtual Learning Communities (VLCs) (Rheingold 1993). These LCs have proven notoriously difficult to create and maintain due to their intrinsic complex nature; the multiple interactions of people, motivational drivers, technology and environment(s) lead to 'organic' development and 'emergence' of new properties, which are not possessed by constituent individuals in isolation. Success appears best achieved when CoPs are co-ordinated and narrowly focussed on a particular problem domain or VLCs have sharply focussed interest domains (Brown & Salafsky 2004).

Timely knowledge generation, however, has proved insufficient for economic success in many areas; a new type of *Complex LC (CLC)* which combines learners, teachers and business professionals in a contextual, creative space with the goal of not only developing the knowledge and skills but creating ideas, synergies and opportunities is emerging (McDonald 2005). These CLCs are significantly different from traditional classrooms, CoPs or VLCs. Firstly, the CLCs consist of not only learners and domain experts, but also potentially business practitioners and economic developers; they are *radically heterogeneous* in nature. Secondly, this heterogeneity means there are vastly different drivers for participation and measures of success. Thus, CLCs can no longer be narrowly focused in either task or interest domains which have proved to be critical criteria for success in CoPs and VLCs.

Critical to these CLCs is their emergent nature; a number of additional properties, relevant to improving citizens' capabilities may emerge: timely knowledge, social capital (Daniel 2003), eLiteracy (McDonald & McGill 2005) and creativity (Cavalletti 2003). Successfully 'seeding' this new generation of CLCs to maximise beneficial emergence will prove a considerable challenge; understanding the complex effects of drivers and constraints on emergence is vital. Unfortunately, emergence is however not yet fully understood (Kubic 2003).

The aim of the 'research in progress' being reported here is to characterise emergence found in CLCs. This will not only provide a base for developing future 'seeding CLCs' strategies but also lead to improved understanding of emergence in general.

The research focuses on CLCs as Complex Adaptive Systems (Holland 1998), examining both innate and emergent characteristics of CLCs and their relationship. Traditional literature review and synthesis is combined with survey of new CLCs. Emergence is analysed, categorising it in terms of the resultant phenomena and its 'meta' characteristics.

The novelty of this research is that it not only develops understanding of a radical new LC but it extends understanding of emergence, building on Goldstein (1999) and Kubic (2003). In particular, it extends work on existing learning communities and introduces insight from other domains (e.g. category theory).

Provisional results support the need to improve understanding of emergence and show a range of emergence which will be best characterised with a 'matrix' approach, thus

enabling a 'meta' characterisation of emergence. Insights from category theory appear to offer a fruitful method for developing a general categorisation of emergence. Further work on how underpinning technological may influence emergence is recommended.

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