

Multi-Level Knowledge Innovation Networks

The need for systems thinking to build cultural capacity for innovation throughout school education

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Abstract

This paper serves as prompt for discussion for reasons which as a practitioner I have found necessary to enable practice change in school education to altering normative, technological and policy imperatives. My purpose is to enable a conceptual and operational bridge from those not well acquainted with deep constructivist practice and specifically Knowledge Building, to those establishing the *Building Cultural Capacity for Innovation* initiative at this Summer Institute. I write as a practitioner who sought with colleagues to enable Scotland's 2004 curriculum reform of Four Capacities of student/pupil potential and capability over a twelve-year period to 2016. I encountered a mismatch between audit and curriculum which I found to reside in different conceptual assumptions tempered by inequitable power relations. From that difficult experience I articulate a central need for Systems Thinking and Knowledge Building to serve as symmetric partners in the advance of *Building Cultural Capacity for Innovation* throughout school education.

Introduction

Social change and technological change have been recently so rapid that the means of organising school education practice have found difficulty keeping up. This applies across the domains of management, governance, evaluation, assessment, accountability and the operational tools which bind these altogether. Hannon (2009) writes of "disconnects" wherein "the release of collective creativity – which increasingly characterise successful 21st Century workplaces and enterprises – are, for the most part, absent from school environments." Knowledge Building as a concept and set of practices articulated by Scardamalia and Bereiter (1993), and subsequently by them and colleagues associated with the Knowledge Building Summer Institutes, is quite the reverse. As Scardamalia and Bereiter (2014) put it, "The basic premise of the Knowledge Building approach is that, although achievements may differ, the process of Knowledge Building is essentially the same across the trajectory running from early childhood to the most advanced levels of theorizing, invention, and design, and across the spectrum of knowledge creating organizations, within and beyond school. If learners are engaged in processes only suitable for school, then they are not engaged in Knowledge Building."

The Four Capacities of Scotland's school curriculum reform 2004 to present

From 2004 and continuing to present Scotland initiated a major school curricular reform (Scottish Executive 2004). Four purposes were framed as enabling "Four Capacities" of pupil/student personal, social and intellectual development as "successful learners", "confident individuals", "responsible citizens" and "effective contributors". These were considered equal such that attainment, being learning in the conventional sense, was considered equal to the goals of confidence, responsibility and contribution. It was considered that these would operate holistically so that a very different notion of curriculum and thus of education practice would emerge from the initiative to that which hitherto applied. Essential characteristics were set out as a diagram listing the "capacities" together with key attributes and defining capabilities to be fostered for each, as set out in the diagram on the following page.

