

COLLECTIVE INTELLIGENCE: WHAT IT COULD MEAN FOR EDUCATION

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Over three decades ago, Lortie (1975) persuasively argued that the lengthy “apprenticeship of observation” — which provides students with hundreds of hours observing teachers’ behaviours with little or no access to the reasons behind those behaviours — provided a powerful template for how new teachers approach their classroom responsibilities. In short, we tend to teach as we were taught according to familiar cultural patterns. These patterns, which Tyack and Tobin (1994, p. 453) called the “grammar of schooling,” are deeply entrenched and highly resistant to change. There have been many attempts to reform the culture of the schools; none have resulted in fundamentally different ways of thinking about teaching and learning (Sarason, 2002).

In this essay I argue that many of the digital technologies associated with Web 2.0 have the potential to drive educational reform in powerful ways. Both popular and scholarly literature have devoted quite a bit of time to exploring the potential of digital technologies such as Wikis, blogs, and social networking for improving the quality of students’ learning in the classroom. One of the most popular rhetorical devices in use is Prensky’s (2001) distinction between “digital natives” (those who grew up using digital technology and are thus assumed to have expertise using all forms of technology) and “digital immigrants” (everyone else). I find the distinction between digital natives and digital immigrants unproductive at best, and ageist at worst. The dichotomy ignores the fact that facility using applications such as Facebook, blogs, Twitter, or instant messaging for purposes of organizing one’s personal life has little bearing upon one’s ability to employ these same technologies to engage in learning experiences. Creating an individual blog to share personal observations and pictures is different from creating a shared blog to work with a group of people to construct knowledge about a particular topic.

It is clear, however, that humanity is in the midst of a period of major social innovation as a result of the digital technologies often grouped together as “Web 2.0.” People of *all* ages are able to produce, co-operate, and collaborate in ways that they never have before. Shirky (2008, pp. 47–54) develops the idea that sharing, co-operation, collective production, and collective action are the primary ways in which people use Web 2.0 technologies for social interactions. Taken together, these four types of interaction might be thought of as manifestations of collective intelligence, a field attributed to Douglas Engelbart (Engelbart, 1962; Engelbart & English, 1968). Wikipedia, often held up as an example of collective intelligence, states “Collective intelligence is a shared or group intelligence that emerges from the collaboration and

competition of many individuals” (Collective Intelligence, 2011). Similarly, the MIT Centre for Collective Intelligence (2011) asks: “How can people and computers be connected so that — collectively — they act more intelligently than any individuals, groups, or computers have ever done before?” The question is germane to educators today, particularly teacher educators concerned with preparing future teachers who are going to be interacting with a culture that is used to sharing, co-operating, and collaborating online.

Traditionally, the education system in North America has been geared toward individual achievement and the completion of individual tasks. Despite some interest in teaching strategies such as jigsaw-group work and co-operative learning, the overall focus of the education system on traditional, transmission-oriented approaches to teaching and learning remains strong (Hargreaves, 2003). The challenges to education associated with the “low-cost” of social interactions, particularly interactions that allow groups of individuals to do things that collectively seem intelligent, are of particular interest to teacher education. Are teacher candidates able to transfer the skills they have developed at sharing social information online to an academic environment? What opportunities can teacher educators provide that enable not only the sharing of information in the teacher education environment, but also co-operation and collaboration toward a co-construction of knowledge? Finally, is there a potential for small groups of teacher candidates in teacher education programs to connect with other groups of teacher candidates for the purpose of engaging in a collective action?

Teacher educators have a golden opportunity to disrupt the effects of mass acculturation through traditional schooling by using digital technologies that are likely to contribute to collective intelligence. In my own responsibilities as a physics and mathematics methods professor, I am exploring questions such as: What sorts of digital technologies can best support an emergent, collective intelligence in a teacher education methods course? What is the role of the teacher educator in such a collective? Under what conditions might teacher candidates undertake a collective social action?

These questions demand rigorous investigation and thoughtful answers. “Social tools don’t create new motivations as much as amplifying existing ones,” writes Shirky (2008, p. 293), and the new digital technologies associated with Web 2.0 go a long way to enhance the natural desire of learners to work together on a common problem. It is unproductive to spend time labelling people as digital natives or digital immigrants when the reality is that Web 2.0 has given us the opportunity to share, co-operate, collaborate, and take collective action. From the ease with which digital photos are shared to the ubiquity of the blogosphere to protests organized using Twitter, people of all ages have demonstrated a remarkable willingness and ability to act collectively in an intelligent fashion. Educationists would do well to consider the ways in which our courses might take advantage of the natural human impulse to create and share.

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References:

- Collective Intelligence. (2011, February 1). In *Wikipedia, The Free Encyclopedia*. Retrieved February 1, 2011, from http://en.wikipedia.org/w/index.php?title=Collective_intelligence&oldid=408615401
- Engelbart, D. C. (1962, October). *Augmenting human intellect: A conceptual framework*. Retrieved February 1, 2011 from the Stanford Research Institute Web site: http://sloan.stanford.edu/mousesite/EngelbartPapers/B5_F18_ConceptFrameworkInd.html
- Engelbart, D. C., & English, W. K. (1968). A research center for augmenting human intellect. In *Proceedings of the December 9-11, 1968, Fall Joint Computer Conference, Part I* (pp. 395-410), San Francisco, California.
- Hargreaves, A. (2003). *Teaching in the knowledge society: Education in the age of insecurity*. New York: Teachers College Press.
- Lortie, D. (1975). *Schoolteacher: A sociological study*. Chicago: University of Chicago Press.
- MIT Centre for Collective Intelligence. (2011). MIT Centre for Collective Intelligence. Retrieved February 1, 2011, from <http://cci.mit.edu/>
- Prensky, M. (2001). Digital natives, digital immigrants part 1. *On the horizon*, 9(5), 1-6.
- Sarason, S. B. (2002). *Educational reform: A self-scrutinizing memoir*. New York: Teachers College Press.
- Shirky, C. (2008). *Here comes everybody: The power of organizing without organizations*. New York: Penguin Books.
- Tyack, D., & Tobin, W. (1994). The “grammar” of schooling: Why has it been so hard to change? *American Educational Research Journal*, 31(3), 453-479.

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