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Organizations We Can Do Without – Or Can Work Within

My Vexation: Same Story, Different Day

The encroachment of NCLB's upon science education makes me skittish. It seems our mathematics education peers have survived the attention they received while language arts colleagues have been less fortunate. I worry and wonder about the prospects for science teaching and learning. With each new press release about science education, I take more than just a passing notice because the implications could be quite profound for me as a teacher educator, for my work as an educational researcher, and for the schools where my teaching colleagues are laboring.

Recently I received an email announcing that all of our nation's governors were going to meet and discuss science education, particularly efforts to increase the number of students who select scientific careers. Curious about who would be participating in addition to the fine collection of state leaders, I followed the links to their website. There I read that an official from NSF, two corporate heads, and the president of a science museum (and former astronaut) would appear on the panel. Also present would be students competing in a national high school science fair. All good people I am sure. But no teachers, no education researchers, no science teacher educators.

This isn't the first time this has happened. I pondered who else should be at this assembly – as well as the many other gatherings about science education that occur around our nation. On the website of a national research association that affiliates itself with science teaching, it claims to be "committed to the improvement of science teaching and learning through research" with the goal of helping "all learners achieve science literacy." Surely this organization, boasting over 1000 members, should have a place at the conference table.

The science education research group claims to work toward "communicating science education research findings to researchers, practitioners, and policy makers" as well as "cooperating with other educational and scientific societies to influence educational policies." Since I've been a dues-paying member of this association for around fifteen years, discovering the blatant contradiction between what this group claims and what it accomplishes was something I'd expected. Nevertheless, my disappointment with the organizers of governors meeting morphed into frustration with my science education research association. While I would acknowledge that one cannot demand to attend such a political event, there is no evidence the research association's leadership team made efforts to be involved. It seems easier to complain about being ignored rather than taking any efforts to ameliorate the situation.

I suppose I should be more tolerant. Education professors weren't groomed to be politically active – but my frustration continues to build. First, I'm not imposing my ambitions onto this association because they claim policy-shaping as a goal. Second, as our cherished subject area moves into the national accountability spotlight, I feel an urgency in my bloodstream. And third, and this is admittedly petty, hundreds of thousands of dollars sit in the association's accounts and yet they seem unable to find admirable uses for these funds.

It has become increasingly difficult to be complacent. In darker moments, I wonder if there hasn't an implicit contract between this association and me (as well as all other dues paying members) – if so, then the organization has failed to hold its end of the deal. If this has any legal implications then I suspect a class action lawsuit is in order. There is little evidence that this association will an active and collective role in accomplishing the very purposes they highlight within their mission statement. I suspect we would have a strong case. After all, in the dozens of national documents (TIMSS, NAEP, Project 2061, NCLB, etc.) how might this association provide evidence to contradict my accusation that they have failed to deliver on their promises?

The problem with taking this on is that I can't imagine what compensation would be appropriate if the association lost its case. I don't really know that asking for my membership fees back is all that significant. The issue isn't really about the squandering of money but the sedentary complacency toward unrealized opportunities. I want the association to change its practices. Either that or I should stop pretending I believe in its goals. Incompetence can be tolerated; hypocrisy is too aggravating to ignore. Is this asking too much of a bureaucracy that is self-sustaining and wealthy – and by those criteria considered successful?

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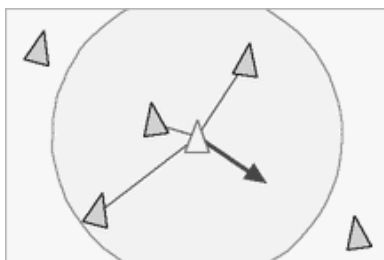
My Venture: A New Day with a New Narrative

My friend Andy Hurford introduced me to the concept of self-organizing critical systems and I wonder whether I might be capable of applying those processes to a community of scholar adventurers. Essentially the parts within these systems follow a very simple set of rules that lead to the formation of very complex patterns. These patterns, either static or ever-changing, appear and function as if a master controller was at work. This concept of self-organizing systems has been successfully applied to generate parsimonious explanations of schooling behavior in fish and mound building activities of termites.

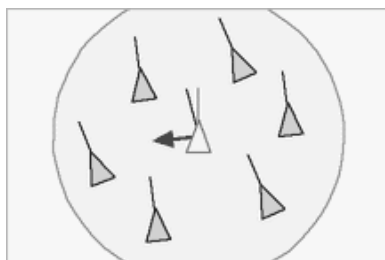
In these examples, while it appears that an overseer was controlling the system, as evidenced by their collective efforts to swim, fly or herd, it is actually the case that the individuals follow the same script and, because these scripts are interdependent, an orderliness emerges. A classic example is Boids which can be accessed at www.red3d.com/cwr/boids/ while Scott Camazine's *Self Organization in Biological Systems* provides an astonishing compilation of examples of everything from unicellular organisms to vertebrates following principles which can be accommodated by the simple explanations of self-organization.

Using nature's example, we have an alternative to a hierarchical organization for a group of professionals. Rather than a single leader, supported and protected by a Board, who then seeks to establish and maintain systems for guiding individual players, the idea of a self-organizing system seems to be a viable option. This claim of viability is supported by a wealth of examples that are the clear products of natural selection. In other words, even though I cannot point to an example of a professional self-organizing assembly, I feel as if the elegant models from nature are worth testing. This leads to my venture.

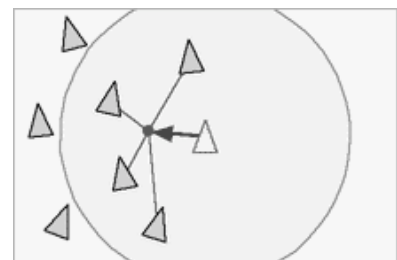
Without neglecting what I've helped initiate, I would like to find ways to encourage the continued and organic system of Crossroads. It is far too easy to follow old paths: formalize an organization, issue membership cards, create a logo and website, initiate a journal, seek funding, select leaders, etc. I have more confidence in my colleagues than to believe that they must somehow be managed or controlled. My dream would be that the group becomes self-organizing, dynamic, and conscientious. I envision something like this. Each participant in Crossroads adopts the same philosophy. Analogous to the Boids simulation, every person would rely upon a shared and finite set of guidelines. The Boids function using only three heuristics: Separation, Alignment and Cohesion. The first prevents crowding and crashing, the second insures that adjustments are made to be consistent with others, and the third preserves the interconnectedness throughout the group.



SEPARATION: steer to avoid crowding local flockmates



ALIGNMENT: steer toward the average heading of flockmates



COHESION: move toward the average position of flockmates

What I would like to develop are ways to distribute the preparations and implementation of Crossroads. In short, my venture is to release some control and find ways to build collective capacity. One uncertain step is developing a commonly shared core of principles that promotes interdependence and self-organization. So let me nominate four "scripts": deliberate and persistent attention to issues of diversity; recognition and pursuit of non-rational ways of knowing (e.g., the arts); commitments to learning environments in which risk-taking is rewarded with serious regard and sensitive responses; and determination to reach across institutional boundaries and defy ascribed professional roles in the service of increased scientific literacy for all.