

Building Truly Collaborative University-School Relationships

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VEXATION

The theme of social capital for this year's conference is most appropriate for my vexation and venture. Briefly, my vexation stems from the lack of interaction that exists between my current institution and local schools.

First, some personal background. When looking at faculty positions, I was attracted to those that would allow an opportunity to engage with schools, teachers and students. One of the draws of the position that I accepted was the proximity to school districts where a difference could, and desperately needs to, be made.

It truly is an exciting time to come to Connecticut as a science educator. On the surface, it appears that elementary science education is gaining the necessary attention. The state has also voiced a commitment to promoting reforms-based science instruction that emphasizes and involves students in inquiry-based science experiences. A series of curriculum-embedded performance tasks have been designed and disseminated to school districts, with a stated desire "to influence science teaching and learning throughout the school year" (CT DOE, 2008a).

While these initiatives are outwardly encouraging, in reality the state of science education here in CT remains quite distressing. On the 2007-2008 state tests, only about half (55.2 %) of all fifth graders met the state's modest goals, with low-income and minority students scoring an average 12.9 points lower in science than in other subject areas (ConnCAN, 2008). Time devoted to science in the elementary schools that I visit is minimal, and pushed aside entirely during testing periods for other subjects that contribute to the calculation of a school's Adequate Yearly Progress (AYP). Even if they had the time, many elementary teachers shy away from greater incorporation of science, lacking confidence in their own science knowledge and of inquiry-based instructional approaches.

I realize this is a scene that those at Crossroads are all too familiar with. Thus, the vexation I voice here is not so much in regard to the current state of elementary science education in CT or in the US, but a sincere disappointment with the missed opportunities that I see for confronting these critical issues.

I do not envision a simple solution to these complex dilemmas. If there is to be a solution, it will require the combined, concerted efforts by many parties. I also believe that change will need to come from within the schools, not solely from state and national authorities. As a first year professor, I came to my new home and job with great enthusiasm and energy. I was also perhaps somewhat naively optimistic about the existence of relationships and structures through which I would be able to work on the science education issues that trouble me, and so many others. I have come to realize that what is lacking is, indeed, social capital. I hope to seek out and embrace the energy of those with similar ambitions, and work creatively to invest in building those opportune relationships and structures that I believe can influence change.

VENTURE

As a leader in teacher preparation in Connecticut, my current institution has tremendous opportunity to influence teaching and learning locally. We are well positioned to reach both pre-service and in-service teachers, and support a learning community that brings a variety of key education stakeholders together. And yet, I feel that we could do so much more.

The Connecticut State Department of Education's September 2008 Position Statement on Science Education urges higher education institution and local schools are urged to form a community of practice with shared responsibilities and commitments toward common goals (CT DOE, 2008b). Recently, the institution where I work organized a Professional Development School (PDS) Network designed as a collaborative effort between local schools and the University. Pre-service teachers would receive support in a structured and authentic learning environment whereas in-service teachers will have opportunities for continued professional development. There are currently more than sixty schools from nine districts in this network, and hundreds of field placements are coordinated for our pre-service teachers each semester within these schools.

These schools perform an invaluable service to our students by opening their doors and providing often some of the most meaningful experiences of their college careers. However, the reciprocal benefit is not nearly as established. The sort of professional development currently offered to practicing teachers comes in the form of graduate coursework and isolated workshop offerings. While these are certainly appropriate, I feel that a true collaborative PDS relationship would involve a similar level of ongoing support provided to in-service teachers by those of us at the university. My current project is designed to more fully realize the goals of the university's PDS Network and capitalize on the opportunities it affords for all.

Pre-service and in-service teachers would be partnered in a collaborative project to enhance teachers' understanding of and self-efficacy related to incorporating high-quality inquiry-based science lessons in the elementary science classroom. The importance of teaching of scientific inquiry has been acknowledged since the 1960's (Schwab, 1962), with increased attention

being given more recently with the inclusion of inquiry in the *National Science Education Standards*. Despite this emphasis, elementary teachers often struggle to understand what inquiry is and how to effectively plan and implement activities that support high levels of inquiry. I have heard repeated requests from local teachers for increased professional development on this topic.

More specifically, participants will include those pre-service elementary teachers enrolled in my Elementary Science Methods course and self-selected K-6 in-service teachers from our PDS Network. Practicing teachers will join the Methods class during sessions in the fall. Topics will include:

Session 1: A simplified explanation of inquiry and relating habits of mind

- Practical examples tied to state and district standards

Session 2: Moving toward a more student-centered learning environment

- Questioning in the science classroom
- Writing and talking science

Session 3: Integrating science and other content areas

- Use of trade books to support inquiry-based science

Participants will be paired up during these sessions, and the pre-service teachers will complete fieldwork hours in the experienced teachers' classrooms. Together, they will create a joint action plan for the incorporation of a specific, standards-based inquiry lesson. All will reconvene at the end of the semester to report on the outcomes of the joint projects.

It is my hope that this experience will positively influence all participants' self-efficacy beliefs in regard to inquiry-based instruction. This may in turn enhance their ability to not only incorporate high-quality inquiry-based science lessons independently in the future, but also to serve as leaders within their schools. Finally, the project has the potential to serve as a model for future university courses that feature collaboration between pre-service and in-service teachers and provide timely support by addressing current needs of the group members. Such partnerships afford all involved an opportunity to learn alongside and from one another. Teacher candidates, practicing teachers, and university faculty have unique and varied experiences and knowledge to offer one another. Forging and strengthening relationships between these parties deepens our social capital; in doing so, we will be better positioned to institute reform.

By the time the Crossroads group convenes in Portland in September, this project will, hopefully, be underway. What I seek from my colleagues is a critical look at the inception and current state of this project, as well as suggestions for similar initiatives in the future. I also look to the group for advice more broadly on establishing and maintaining PDS relationships that are true to their mission of fostering and supporting a mutually beneficial partnership. I seek your feedback on the following issues and questions:

Administrators were first contacted and briefed on the project, as their support is deemed essential.

There were varying degrees of interest, as expected. *What advice can you offer regarding administrator buy-in, particularly those schools where science is not prioritized? A handful of principals have committed to assist in teacher recruitment and to providing school-based support for the implementation of action plans. However, all expressed hesitation about teachers' interest in attending multiple sessions. Knowing that professional development has limited effectiveness when it not on-going, what suggestions might you offer for addressing time-constraints? Incentives for teachers?*

I am interested in the dynamics of collaborative pre/in-service teacher courses. *What questions would you like to ask the pre- and in-service teachers about their participation in the course? What advice and/or cautions would you offer for faculty conducting such courses?*

What do you consider to be the characteristics of a successful PDS relationship? From your position, what would you hope each of the involved parties to take away from such a partnership?

Currently, the research questions that I hope to answer for this pilot study are focused on the pre-service teachers and include: How does the collaborative project influence (a) pre-service teachers' ideas and beliefs associated with the teaching of science as inquiry? (b) pre-service teachers' ability to design and implement inquiry-based lessons? In the future, I would like to extend my focus to include consideration of impacts on in-service teachers. *Do you feel the same research questions are appropriate?*