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Building a Science Education Program at a Small University

My Vexation

I just took my first job in a school of education at a small, private Catholic university in Texas. The philosophy of the school of education follows that of the entire university and focuses on preparing “caring, moral educators who are well prepared to teach in culturally diverse settings”. There is a strong focus on social justice and service to the local community here, especially for those in the greatest need. For example, the university is known for its program offering full scholarships to students from migrant worker families.

I was hired for two reasons. The dean recruited me to help build the undergraduate secondary education program (non-existent for a number of years). So one of my missions is to rebuild the numbers of undergraduates in this program. An important second reason for my addition here was to develop a science education component in the Masters of Arts in Teaching (MAT) program initiated this fall. The five-year plan proposed by the dean has the science education specialization being developed in 2008-2009 and implemented in 2009-2010. The program of study for the MAT program includes 36 credits, with 15 credits in an area of specialization. The current plan is to create five science education courses that would satisfy that requirement for the program of study. For someone with vision however, the inclusion of a science education specialization into an existing MAT program could easily grow from a simple specialization into an independent science education program.

In terms of support and staffing, I am the lone secondary education person as well as the only science education faculty member at the university. The dean (also relatively new) has an interest and background in science education but she has little time. The school of education is undergoing growth rapidly and I am one of four new hires this year (This has doubled the number of contract faculty in the school of education from last year). My colleagues seem excited to collaborate in teaching and research, but we all have additional responsibilities and thus, little time. In general the atmosphere here is charged. A few faculty who have been at the university for decades are resistant to the changes that the new dean is imposing (go figure). These changes include assigning new responsibilities and job titles to faculty who have been teaching the same courses forever as well as restructuring and adding new programs to the offerings of the school. Fortunately the new faculty seem excited and motivated to build community and work together on a vision for the future.

The opportunity to design and build a unique science education graduate program may seem like a pot of gold for some, but the vexation for me is in planning and deciding what to do with this opportunity. It is quite overwhelming. The constraints that I face stem primarily from a lack of time and experience. I currently teach three undergraduate education courses including a general secondary teaching methods class, curriculum and evaluation and a student teaching seminar. In addition, I supervise student teachers and am charged with creating links between the sciences and education for future interdisciplinary work. I was given a reduced load this semester (typical is 4/4) because I am still writing the dissertation. In the future I will be able to request a course load reduction to help with the planning of this project but that has not been formally promised. At the moment, the future is hazy. I also have little practical experience in designing and setting up an entire program. I am still getting used to the campus/university culture here and am not sure how I will be able to plan and recruit for students in a future science education masters program with so many courses to teach and so little experience. Another concern is that this task seems like a lot to handle as I address my own path towards tenure over the next five years. How do I take care of my own professional development while fulfilling the goal of a science education program? Despite these questions, this vexation is also a wonderful opportunity to design an innovative program and to be able to try out some new ideas about what it takes to create leaders in the field.

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To summarize, I have been hired in large part because of my science education background and am extremely interested in building a self-sustaining graduate program in science education. The vexation that I am feeling is how to find the time to learn about and do this in a way that allows me to attend to my own professional development towards tenure while also creating a program that attends to the needs of the science education population in this community.

My Venture

To alleviate some of the vexation, I have listed some potential pathways this venture. First, my own education has given me some background experience. I completed an innovative master's program that did a good job at giving me a M.Ed. and secondary teaching certificate in Biology. So I have some experience to base my own ideas from. This program provided a series of courses in methods, management, history and philosophy of science, equity, etc as well as a year-long student teaching experience in both middle and high schools. Second, I have the support and interest of my dean (also with a background in science ed.) for the project. This equates to release time and money for conferences like this one, as well as a sympathetic ear and input into the logistics and framework for the program. Third, the university is pushing hard to become a top master's level institution in the west over the next seven years. The addition of this program could bolster our image, which could equal more leverage for program resources and support at the administration level. Finally, my own reading into program design from my dissertation has given me a head start into the qualities and characteristics of setting up an effective program.

I am still pondering the best way to approach this problem. Some of my ideas for this program are congruent with other initiatives on campus. The current focus in the MAT program is to provide individualized programs for some of the smaller school districts in the area. The idea is that the university partners with the school district to create courses and offerings that are contextually appropriate for the needs and issues of the districts. In this way, teachers can complete an MAT and take courses in the evenings at their own campuses. One option for the science education program would be to take this idea and use it to provide science teachers in local districts with graduate coursework that is relevant to the issues that they face in their classes. Another option is to build a program that revolves around techniques like co-teaching or lesson study as a way to support critical reflection in participants. A third interest at the university is to build a global component into all instruction so the potential for a student teaching / coursework exchange overseas is another option I am considering.

What direction should I take? What are some success stories (or failures) from others that I can use to shape my own program? Should I push for implementation earlier or keep to the scheduled implementation in 2009-2010? Do I focus on working within the framework set up for the MAT program or suggest an alternative route that includes, for example, certification and a M.Ed. in science education? Because the university is not bound by the rules that govern big state schools, I have the option to design and implement a program that breaks convention and takes a risk. Your feedback and suggestions are extremely appreciated.