

## **Making Your Case: Ten Questions for Departments and Individuals Building an Argument for Work in Discipline-Centered Education**

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### **Introduction**

In our chapter, "Is the Scholarship of Teaching and Learning New to Chemistry?," Dennis Jacobs and I outlined the different ways in which education-focused faculty members have been represented in departments of chemistry (Coppola & Jacobs, 2002). Briefly, these include (a) a long-standing tradition of chemistry professors publishing in the 86-year-old *Journal of Chemical Education*, (b) the rise of the "chemical educators," as a division of the American Chemical Society, (c) the growth of the Chemical Education Research community (similar to the disciplinary education research communities in physics and biology), and (d) those who have been exploring their students' experience through the scholarship of teaching and learning. Our reply to the titular question ("*perhaps*") is as true today as it was then. In the meantime, the American Chemical Society has issued an updated statement on scholarship in chemistry (ACS, 2007), and a task force on hiring and promotion in chemical education has published guidance to faculty candidates who are seeking education-related positions (Bauer, et al., 2008). I support strongly the non-separatist tenet of the scholarship of teaching and learning (SoTL) conversation, that is, where all professors are, by definition, collectively responsible for advancing teaching and learning in more intentional and less haphazard way than most currently are (Coppola, 2007). In this essay, however, I wish to take up a related issue, namely, the integration of education-focused faculty positions within the traditional disciplinary unit.

For at least 15 years, I have frequently had conversations with chairs, deans, and search committees who think that they are interested in bringing "education" into their departments, and with individuals who are thinking about pursuing such positions – especially at the junior level, and particularly with those who, near the end of their PhD programs, realize that they do not want a career focused on discovery research in the laboratory. The question from both sides is sincere: *How do we develop and support an education-focused person in a disciplinary department?*

One reason I have these conversations is that there are notable instances where these efforts did not work out, where they did not go as expected, or where the promise or expectation of "bringing an educationalist into the department to fix everything" did not, in fact, result in anything that looked like that. Another reason is that I had the experience of helping the University of Michigan think through the question of whether an education-centered person should be a Professor of Chemistry. The longer version of my personal story, and that of a few others who did this in other disciplines at other universities, can be found in the book, *Balancing Acts* (Huber, 2004).

## **Avoiding the Language of Exception**

There are many bad models for bringing an education-focused person into a traditional disciplinary department. I say this because of the prevalent “languages of exception” that exist around work in education when it is done in a traditional disciplinary setting. By language of exception, I mean that in a Department of Chemistry someone is called a “Professor of Chemical Education” when everyone else, regardless of their area of specialization, is called a Professor of Chemistry. People who are called “Professors of Chemistry\*” (asterisked professors) in a department of un-asterisked Professors of Chemistry have targets painted on their heads because it assigns real difference to an imagined difference. Generally, and unfortunately, this difference is assumed to be a softening of standards from a more legitimate area of study. One of the key findings in Huber (2004) is that institutions and individuals who understood that they could play by the existing rules of the game were more likely to be successful than those who argued from a position of needing different rules or standards. In other words, discipline-centered education is just another emergent area of specialization – something that disciplines need to accommodate continuously – and puts the debate into familiar territory rather than an unfamiliar one.

Getting it wrong is easy. Education-focused faculty lines can be viewed as service or staff positions, where the work is pre-defined in ways that faculty lines are never defined (e.g., “caretaker of an introductory undergraduate program”). The prospective evaluation of the work, even when it is addressed, is generally not well defined because there are not good, documented examples to follow... and many aspects of evaluation make faculty colleagues nervous: where will the person publish, what will the person publish, what funding is reasonable, will the person take students, who should write letters one day, how to judge progress, and so on. Sometimes evaluation criteria are modified because the thinking is that the work of these individuals in education must be about their teaching acumen, so arguments to broaden the definition of scholarship are used, but used badly, when the definition of education is narrowed to the teaching performance. Sometimes these positions are attached to K-12 pre-service teacher education, if the institution is structured in this way, which can also automatically put the work into the service bin when compared with teaching the majors and PhD students who are enrolled in the unit. Sometimes a cluster of education positions is segregated into a different division, or even into their own department, which further separates these individuals from the “real” members of the faculty. In my experience, anything that makes the work of education unusual, rather than usual, can flag doubt, fear, and skepticism.

The work of an education-focused faculty member, I recommend, needs to be seen from the outset as usual: where the prevailing criteria for scholarly work hold because those criteria are already broad enough, and because the work simply represents activity in an emergent interdisciplinary area (combing the discipline and education); where teaching acumen plays the same (perhaps small) role that it does in any other case; and where the normal criteria for evaluation, tenure, and promotion, which typically do not specify the subject specialty in the first place, can be read to include this work, without exception.

## **The Ten Questions**

I have framed my list of ten questions with the prospective faculty candidate in mind, but they are exactly what I share with a department, a chair, or a dean, because these people are the ones who need to be asking these questions and evaluating the answers. Some of the ideas are broadly applicable, and might well apply to any faculty candidate, while others

derive from the bringing “discipline-centered teaching and learning” to a department. And while these questions are crafted with natural and physical scientists in mind, analogies with other areas are easy to make.

### **(1) Can you actually be an Assistant Professor in discipline-centered teaching and learning?**

Even before you acknowledge the obvious (pay attention to the currency of the realm – publish everything that is publishable, do it in the right places, get external recognition, bring in money), you need to answer this question: compared with anyone else who is being hired into a traditional position, do you have the same level of professional readiness? I believe the universal answer to this question, today, is still a resounding and perhaps annoying “no.”

The reason for my answer is that no one is yet appearing at the end of the educational pipeline with the training and credentials to jump onto the moving train of a tenure-track position with the same degree of preparation that a typical Assistant Professor has for doing discovery research. *No one completing a post-doctoral appointment today is actually as qualified to take an Assistant Professorship in discipline-centered teaching and learning as someone who is going to do traditional discovery research.* A typical Assistant Professor is a person who was identified as a promising undergraduate because of the research-based curriculum work in which they excelled, in which they were further cultivated as a graduate student, and from which they were harvested after a post-doctoral position. This does not mean that no one should be hired until the pipeline is in place, but it does argue for a degree of patience, open-mindedness, and accommodation, because the person is at a relative competitive disadvantage compared with someone who is working from the core of an existing sub-disciplinary area. This is a typical concern for all new faculty members who attempt to earn tenure in an emergent area, and so the important lesson is to understand that education-focused faculty members are in the same boat.

### **(2) Are you collaborating with faculty in the learning sciences and other aligned areas, according to your scholarly agenda?**

When you carry your expertise into a new area, you are not required to learn it all; you need to learn enough to make meaningful connections and translations. A traditionally educated PhD in one of the standard disciplines has extensive depth of knowledge, but will simply not mature fast enough to do the sort of work that will have an effect in education if you take the “lone wolf” pathway. While collaborations with faculty members in a School of Education are the obvious starting point, and probably necessary, it is also possible to draw on numerous areas that intersect with education in the discipline, for example, psychology, history, sociology, linguistics, gender studies, philosophy, and so on. In fact, building meaningful collaborations is easy when you are the science/math disciplinary expert because no one else even pretends to know what you know. You have to become literate enough in those other areas, however, to make meaningful connections.

### **(3) Have you fallen into the myth of the lone wolf?**

This corollary from (2) is so important that it deserves its own question. The “lone wolf” myth is that 100% of everything you do has to come without relying on the network of people who want nothing more than to see you succeed. Share everything you write – drafts of papers, proposals, talks – with as many people as possible, especially (of course) those who will actually read and reply. Talk strategy. Find out what other successful people have done. Admit what you do not know, which in the area of teaching and learning ought to be considerable. This is dumbfounding: the number of young faculty who fail because they do not learn and follow the strategies that allow successful people to succeed.

**(4) Are you pursuing a program of study that will pass the gold standard: people outside the institution will be able to say they think differently about a small part of the universe because of what you did? Good. Now are you thinking about the other three things you need to do?**

Accomplishment is important, but it is not the whole game. Your body of work will reveal many things: your awareness of where you fit into an area, the way you think about the problems you are working on, how you think your work contributes and why it is important to the literature of the areas on which it touches. Having a hundred ideas is easy; knowing which ones are important and which ones can be accomplished under the constraints of your institutional setting reveal the way you think and make decisions.

While accomplishment frames the work of a faculty member, there are two issues that many understand too late: (1) does your work clearly define an intellectual program on which the next decade can be built, and (2) have you established that you the right person to carry it out?

And then, the third one: in discipline-centered education, as is true for other emergent areas, people in your department and in your home discipline may not understand what you do, and they might hold strong preconceptions about teaching and learning because of their own prior experience. Thus, you also need to understand that what you do is not self-evident, and you need to think about how to translate the significance of your work back into your disciplinary setting.

**(5) Are you cultivating the right relationships with the people who will matter?**

You have to be in front of the people who will be your letter writers one day, and you have to figure out who they are from the outset. You have to throw yourself into the places where these people hang out, accept only those invitations that will potentially put you in front of them, and apply for funding from places where they are making decisions. If there are, for example, Nobel Laureates (or whomever the distinguished cadre might be in your discipline) who are also known for having turned their attention toward education, then you will be well served by cultivating relationships with them. But you need to come to the table with substance. In every case, you have to have something to say that will get people's attention because you are saying something, or saying it in a way, that causes them to want to repeat it.

**(6) Are you still able to be recognized for your work in the discipline?**

*This is one I believe in quite strongly.* You are not supposed to be competing as a disciplinary expert with the big dogs of the field; but, in my view, you want to produce a level of work in the discipline that enables your advocates to address the question of your disciplinary legitimacy. Discovery research, even a few papers written with undergraduate co-authors, provides an entrée for the readers of your CV and the papers in your promotion package. Your disciplinary research record is never going to stand alone, but it is pure unadulterated frosting on the cake for a strong education-focused tenure case, in exactly the same way that a few papers on teaching and learning are used to enhance cases that involve traditional discovery research.

And while an independent research group might be precluded by your institutional situation, lending your disciplinary expertise to collaborating with one or more of your colleagues could be equally effective.

**(7) Are you able to argue that your work requires a PhD in your discipline, and that your work ought to be part of a disciplinary department?**

In post-secondary education, the strength of instructional design, and of educational research design, draws from one's deep understanding of the discipline. Your work needs to demonstrate clearly and convincingly that you are using your disciplinary understanding to help make new insights into ideas that emerge from the learning sciences and other aligned areas in which you have elected to make your contributions. It needs to be clear that without your disciplinary knowledge and your ability to connect it to another area, the work could not have been done.

**(8) Are you sensitive to the idea that part of what you absolutely need to do is guide the rest of the world, starting with your department, with the evaluation criteria for reading your work because of the significant prejudice that exists about work in education?**

When you leave it to others to decide why you do what you do, they'll likely get it wrong, particularly if you are doing something new, unfamiliar, or about which they have a prior opinion, prejudice, and/or bias. Discipline-centered education fits these criteria perfectly. People in this area who leave the decision about how to read and evaluate their work up to someone else are making a huge mistake. This makes the cultivated relationships from (5) critical, but my point here is that it is also the mission of faculty members who pursue discipline-centered education to be reflective and thoughtful on providing explicit (including written), metacognitive guidance for their colleagues on how they might understand and contextualize the work.

**(9) Are you working with students to help pass on what you know?**

Professors in discovery research settings educate in two distinctive ways: in their classes, and with students in research, from the undergraduate to post-doctoral levels, often in intergenerational teams. Another corollary of the "Are you a lone wolf" question is providing opportunities for students to benefit from your understanding of discipline-centered education, as an area of study. Although this might not mean offering large numbers of interdisciplinary PhDs in "the discipline and education," there is a distinct need for a finite number of faculty members in this area of specialization.

In principle, discipline-centered teaching and learning is the one area of specialization that cuts across every academic area of any department, and so bringing this expertise into a department means opportunities for any and all colleagues to learn, and then act on that knowledge, in combination with their own unique disciplinary understanding. Strategically, using intergenerational "teaching groups," integrating undergraduate students though post-doctoral associates in teaching projects, not only provides an entrée for the next generation of faculty members to get as comprehensive education in teaching and learning as they do in research, but also gives current faculty members the best resources they could hope for – interested and motivated collaborators – to work on developing, implementing, and evaluating new teaching ideas (Coppola, 2007).

**(10) Are you treating your work as an interdisciplinary connection between your native discipline and those parts of higher education that impact teaching and learning in a way that you can be recognized for contributions in those areas, as opposed to being the "discipline-centered education guru" who is there to fix and/or manage the introductory program?**

Your department, that is, your colleagues, should be transformed by your presence. There is a danger, in (9), to end up as the education specialist who simply takes care of the teaching concerns with no corresponding change in the department itself. This is bad. The integration of emergent areas invariably involves significant transformation in the work of a

department. In chemistry, the introduction of materials science and chemical biology first arrived as specializations carried by the experience of a few, and then rapidly combined with the existing specializations to ask and answer questions derived wholly from the resulting integrated understanding.

Work in discipline-centered education needs to draw from the discipline and connect it with unique understandings from other areas, as indicated in (2), which are not limited to the learning sciences. These insights need to be equally legitimately played out in both the native discipline and in the aligned areas. If your work combines chemistry and psychology and provides new insights about teaching and learning, then it needs to be able to be written in a way that can be read and understood by both chemists and psychologists. Clearly, these are rarely the same document, but draw from the ability to translate for both audiences, which I think is at the core of what such individuals should be able to do.

### Conclusion

Educating and then integrating the next generation of traditional disciplinary experts into our departments benefits from a strong, complex, structured, and incredibly tacit system. New and emergent areas, of which I argue discipline-centered education is one, benefit when the parts of this system are made explicit and intentional. By introducing these ten questions into the conversation about education-focused work, I hope to help contribute to this goal as departments and individuals build their own arguments for bringing this work, including the scholarship of teaching and learning, into the academy.

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