

ISLANDS IN THE STREAM: NAVIGATING ROUGH WATERS TO BUILD COMMUNITY IN A MIDDLE SCHOOL SCIENCE DEPARTMENT

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Vexation

John Donne wrote “no man is an island, entire of itself; every man is a piece of the continent, a part of the main.” Yet, when I think of my struggles to improve my practice—to provide students with meaningful science experiences through inquiry and problem solving—I feel completely alone.

In order to instigate lasting change within my classroom, I will need the support of my science department. Community is an essential ingredient to foster innovative and effective practices that seem so daunting to the average science teacher. Bybee (1993) outlined 5 qualities necessary for becoming an empowered teacher: significance (having a vision to improve in science education), knowledge, skills and attitudes, community, enjoyment (finding meaningful work and efficacy) and responsibility (to improve science education) (p. 159). As a second-year teacher, my understanding and abilities in the above qualities are still nascent, however one quality is critically absent: community. My conflict sits with me and my 6 fellow science teachers, and my struggle to help us form a community.

One way to build community is by establishing a Professional Learning Community (PLC). PLCs promote a focus on learning rather than teaching, and involve collaboration between teachers to establish similar objectives, practices and assessments, as well as use data to reflect on and improve practices (Dufour, 2007). When looking at my middle school science department, we all want students to master scientific concepts through meaningful experiences. Relief sweeps over me as I discover we all feel alone and in need of some community to help further our practice. However, deeper prodding into my fellow science teachers’ beliefs about what constitutes a “meaningful experience”, and how to assess that students have mastered important concepts reveal that we have disparate ideas of what we need to focus on.

The difference in opinions regarding what is important may largely be due to pressure to perform well on newly implemented state-wide science tests. The 8th grade science team (which includes the department chair) carries the burden of this, since their grade gets tested. If the 7th or 6th grade teams do not cover material well-enough, then the 8th grade team needs to review it, and tensions between grade levels may arise. This upcoming year we will have 100 more No-Child-Left-Behind (NCLB) students in our school, increasing the class sizes to upwards of 35-40 in a room, as well as the number of students who may be low-performing on their science tests. This also changes the demographic at our school, and with that change comes a need to learn new ways to teach students from different backgrounds. Our school’s demographic has a unique blend of about 50-55% Caucasian students, 35-40% Hispanic students, and 10-15% African American students. The social economic status (SES) of these students is about 60% middle to high SES, and 40% low SES. With the pressure to take on more students, and pass standardized tests, it is difficult to maintain a focus on inquiry and in-depth learning.

The administrative constraints placed on top of this result in a seemingly hopeless situation. The principal supports the idea of a PLC, yet cannot allow staff development time to be used to initiate this community. Instead, he suggests our science department meeting as the perfect place for a PLC. This would work well, except our meetings have pre-planned agendas to ensure efficiency, and everyone seems eager to adjourn the meeting as soon as business is attended to. Any additional meetings would most likely overwhelm teachers. DuFour (2007) acknowledges that for PLCs to be successful, the community must persevere through an initial rocky period where teachers are confused. The community is faced with criticism and complaints, and often times the innovation is dropped.

My vexation is: how do I create a successful learning community when the members have disparate needs and visions?

More specifically:

- How do I ensure the community will be successful when members will face initial failures and have to commit time and perseverance to something they may not believe in?
- How do we maintain a focus on effective teaching through reflection, when pressures to perform well on standardized testing pull us away from these values?
- How do we stay motivated to continue our meetings, when time spent on anything other than immediate concerns may feel like a waste of time once the year is under way?

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Before embarking on our endeavor, the department should understand and agree to the mission of a PLC, which is clearly defined by DeFour (2003):

The entire organization is designed to engage teams in a cycle of continuous improvement [by] gathering and analyzing data and information, identifying weaknesses and areas of concern, working together to develop strategies to address specific weaknesses and concerns, supporting each other as they implement those strategies, gathering new data and information to assess the impact of the strategies and then starting the process all over again. (p. 18)

With this understanding in place, we can begin with minor weaknesses and shallower concerns, and spiral down to more core issues as we grow as a department.

An important first step to fostering community in my department is to re-structure the format of our science department meetings. Important housekeeping issues can be taken care of through e-mail rather than face-to-face contact. This will leave more time for collaborative work. Also, we should establish a routine department meeting on campus once a month (as mandated by the principal) and create a more relaxed atmosphere by bringing food to share. If the monthly meeting is successful, weekly meetings can be initiated on a voluntary basis. We can begin our year by establishing easily agreed upon guidelines for all classes to follow. This may include making sure our state standards for science are aligned among grade levels to avoid repetition and ensure all concepts are covered. Also we can discuss minor issues (e.g., lab report or notebook formats, note taking skills, etc.) and develop strategies and implement them to begin modeling the format for a PLC. Although this may not be a leap into student-centered learning, it will establish a dialogue among teachers and help foster problem-solving skills that will be useful for future collaboration.

After we have successfully established an initial PLC program in our science department meetings, we can examine more concerning weaknesses using the established method. Weaknesses we would examine may include the difficulty for lower SES students to master science concepts, students' deficiencies with problem-solving skills, and the difficulty for students to understand and create scientifically sturdy experimental designs. As a department, we would tackle important pedagogical discussions underlying these issues. These may include: What kind of learning experiences do we want to create for our students? What is the best way to teach students? What is the best way to teach students science? These issues may be best discussed informally—at a happy hour, or through conversation. This may help prevent teachers from feeling as though their underlying philosophies are being attacked. Meetings would begin to adopt a more co-generative dialogue based on current problems that were being faced in the classroom.

Another avenue that could develop as teachers became more comfortable working together would be to try innovative lesson techniques as a team and then reflect on what worked and what didn't. This may include an inquiry lesson, collaborative learning groups, learning stations, or other student-centered pedagogies.

By following an initially scripted technique to address issues, we could naturally develop into a problem-solving community and be able to take on more difficult concerns. Having initial successes in our PLC will be crucial to strengthening the community. Also, by listening and working together, our individual concerns and challenges could be addressed and resolved by the group. By the end of the year, I would hope that we could foster programs and initiatives that go beyond problem-solving to promoting enriching experiences and activities for students.