What I learned (and how I survived) my first year of teaching high school chemistry

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Who am I?

Long ago: Chemistry Undergraduate
Who am I?

Long ago: Chemistry Undergraduate

Now: Professor of Chemistry & Biochemistry
Who am I?

Long ago: Chemistry Undergraduate
Not so long ago: High School Chemistry Teacher
Now: Professor of Chemistry & Biochemistry
How did I become a high school chemistry teacher?

June 2003

August 2003

September 2003
Why was I uniquely qualified to teach high school chemistry?

I wasn’t.
So...
I guess I’m going to teach high school?

4th week
To learn...and to vent...I journaled.
Challenge #1: Lack of common, jointly negotiated goals and expectations

“Their expectations of me have never been explicitly stated. Their goals for my experience at the high school haven’t been stated. Maybe where I am happy to be surviving and getting along with students at this point, they are expecting other things out of me. Maybe I should ask what their goals are for me? Silly that they should tell me to do this for the students but not do it for me.” (Journal, October 17, 2003)
Strategy #1: Negotiate some things BEFORE the school year begins...

- What are my personal goals for this year of school?
- How can I contribute to the school and my colleagues this year?
- What will my teaching assignment be?
- How will I interact with the other teachers?
- Will I have a school mentor?
- How will I learn about school events?
- What are the school norms for dealing with challenging students?
- Do my colleagues have any specific goals for me this year?
Challenge #2a: Lack of knowledge about and experience with K-12 teaching practices

• I was not familiar with:
  • High school-appropriate pedagogies
  • High school curriculum
  • Students’ prior knowledge
  • Classroom management strategies
  • Block scheduling
  • School culture, standards and expectations
Challenge #2b: Struggle to become a member of the high school science department community

“How frustrating. There really should be some kind of formal mentoring system for first year teachers where they get more direction than this. Maybe there is. Maybe all the other teachers assume I know what I’m doing (which I do, but not in this context).” (Journal, October 2, 2003)
"I went in to the high school between classes and cleaned for about 1.5-2 hrs. [...] It didn’t take very long, and it was kind of nice to see where things go in the prep lab area. I’m not sure what magic occurred because of my willingness to help, but whatever it was is amazing!!!! While I was working with Rebecca, she mentioned that she tried to get a couple of teachers together to go to lunch so I could meet them. She also asked if I wanted some worksheets/labs for the next unit. She offered. I didn’t ask. How amazing is that? She also gave me some labs that I could do and told me that she would keep all of the solutions/equipment on the cart for me. Wow...I don’t know what to say. This week, all of a sudden, things seem more cooperative to me." (Journal, October 30, 2003)
Strategy #2b: Invest in school colleagues

“I bring in things that the other teachers are using (or at least look at) and the same thing goes the other way. I brought in a flame test to show Rebecca and Greg. Rebecca was curious. She does hers a little differently and wanted to know how this one works. Greg liked the fact that I had a lab and some solutions. He was excited to use my solutions and kept saying, ‘I owe you. I owe you.’ John, all of a sudden, offered a model activity for understanding quantum numbers. I think I’ll sit in his class on Monday and see how he uses it. I brought in the Nassau clock reaction and shared it with other people. They seemed excited about that. So, there it is. I’m still feeling a little overwhelmed, but I’m getting along with the students better and now the teachers, too. What a nice thing!” (Journal, October 30, 2003)
Co-planning

- Subdivided teaching responsibilities
- Allowed me to focus less on materials and content and more time on teaching and management strategies
- Allowed me to implicitly learn about school standards and culture
- Allowed me to focus on student learning
- Gave me a critical friend
Challenge #3: Being overwhelmed with everything I needed to do and be

“It’s funny...there are so many things to pay attention to while teaching. Everyone wants me to pay more attention to managerial things. The problem is when you spend all your time looking for information that you can use in class (labs, content, etc.), you can’t spend that time thinking about other things.” (Journal, October 17, 2003)
“New teachers have two jobs—they have to teach and they have to learn to teach” (Feiman-Nemser, 2001, p. 1026).
Strategy #3: Establish a support/mentoring group outside of the school

• Build a network BEFORE you start teaching
  • Peers/colleagues at other schools
  • Faculty mentors
  • Former high school teachers
  • Family and friends
How did teaching high school affect my university teaching?

• As an educator of future chemistry teachers (in a science class)
  • Forced me to analyze my beliefs about teaching
  • Helped me develop a vision of reform-oriented teaching
  • Taught me how to implement learner-centered strategies

• As an educator of in-service K-12 teachers
  • Helped me develop empathy for K-12 teachers
  • Helped me understand the challenges that K-12 teachers face
  • Changed how I approach teacher professional development
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