

COMPILATION: student teacher in Modeling Instruction classroom

Date: Mon, 7 Apr 2003
From: Matt Watson <Wphun@GATE.NET>
Subject: student teachers and Modeling

Recently, two physics professors from a local college came to observe our freshman physics classes, which are being taught using the modeling pedagogy. Those same professors have now requested that a student teacher from their college be placed in our program sometime in the 2003-2004 school year.

Cathy, Doug & I are honored by their request, but we have mixed feelings about the continuity of modeling instruction through a student teacher.

Has anyone had experience and/or success with a student teacher and Modeling?

Date: Mon, 7 Apr 2003
From: Joseph Vanderway <jvanderway@granadahillshighschool.com>

I had a student teacher work in my classroom for the first semester of this year. *The reason it was successful (at least somewhat) was that the student teacher took a complete 3 week Modeling Workshop the previous summer at ASU before teaching in my classroom.* I think this would be necessary for any teacher beginning Modeling. He then followed the Modeling materials (as I have modified them), working about a day behind my classes, which he observed. All in all, it worked out okay for a first time out.

I believe that Modeling Instruction (especially as a curriculum design) is the way to go for teachers, and if they start with Modeling, then there is much less to "unlearn" in terms of teaching strategies.

The only problem is that just about everything new teachers have learned in education classes (or picked up from being a student in general, or even their own vision of teaching) will be less than helpful in a Modeling environment.

As for student teachers, one thing to keep in mind is that the first year or so of teaching is difficult enough, and discouraging some of the "crutches" like direct instruction and cookbook labs can make it that much harder.

Date: Tue, 8 Apr 2003
From: Donald Day <Srfhappy@CS.COM>

I was the student teacher with Joseph Vanderway during the fall 2002 semester. I feel extremely lucky for many reasons:

- 1.) "Mr. Vanderway" just happened to be on that list of master teachers that I had to choose from.
- 2.) There was something I really liked (and still like, of course) about Mr. Van's classroom. It was (and is) different.
- 3.) Mr. Van suggested to me that I go to a modeling workshop last summer, which I did.
- 4.) Modeling is cool.
- 5.) Mr. Van is cool.
- 6.) The kids at Granada Hills High School are cool.

7.) Numbers 3, 5 and 6 above were very supportive, and have changed some (not all, of course) of my misconceptions about learning, teaching, and school in general.

8.) If my luck continues, then maybe in 10 years I'll be O.K. at this modeling thing. Even with my limited experience now, I think my classes are still a significant improvement over the mental bulimia I observe in many classes.

As you know, everyone loves their own little belief systems, and mine are dear to my heart as well. One of the most difficult things for me was/is developing useful questioning techniques and not expecting correct answers. A few quotes are included below to highlight some of my other difficulties as well.

"No one other thing, probably, works so fatally against focusing the attention of teachers upon the training of the mind as the domination of their minds by the idea that the chief thing is to get pupils to recite their lessons correctly." (Dewey, 1933)

The shift towards a constructivist approach requires students and teachers to assume the difficult task of listening critically to students, focusing on the quality of their arguments instead of expecting specific answers.

"Education that takes as its standard the improvement of the intellectual attitude and method of students demands more serious preparatory training, for it exacts sympathetic and intelligent insight into the workings of individual minds and a very wide and flexible command of subject matter-so as to be able to select and apply just what is needed when it is needed." (Dewey, 1933)

One of the things I will never forget about my student teaching experiences with Mr. Van is his reasoning behind allowing me to ruin his classes (at least I figured I would be ruining them). I can't put it in to words the way he did, but I remember him saying something about my future students and the benefit they will receive. It was probably poppycock but his support gave me confidence I didn't know that I had. Very soulful fellow that Mr. Van.

Note to Mr. Van: You can send that check to my house directly if you wish.

Note to all: I forgot to mention something I recently noticed in an education class the other day. It was a methods of teaching science class for teachers in the San Fernando Valley area. I always just stop by to say Hi to the professor because it's fun to bother him while he's teaching class. The class is overflowing with beginning teachers who are just trying to survive. Most of the techniques they are exposed to (as you can imagine) are on the traditional end of the spectrum. Who is going to help all these beginning teachers and how many kids will they all reach in their lifetime? *If anyone has the opportunity to support the growth of just one beginning teacher as Mr. Van did for me, they are my heroes.*

Date: April 8, 2003

From: DavidMichael Boyer <Yochanon1633@netscape.net>

Before accepting a student teacher this year, it was agreed that he would immerse himself in the modeling approach. He has been very receptive to this methodology and has had a chance each day to hone his Socratic questioning skills. Much work is involved, especially at first, with someone unfamiliar with inquiry/constructivist methods, but it is rewarding process! So *although a modeling workshop was not in his repertoire, he is experiencing the benefits of this teaching/learning style firsthand.* In my opinion, pre service teachers should be taught this approach in their methods classes. I propose there should be 'magnet universities' specializing in modeling methods for those who wish to become physics, chemistry, physical science, or even biology teachers. Last week, the NSTA published the 2001 US Dept of Ed findings citing the Physics Modeling Method as exemplary. My student teacher was really thrilled to see what he was practicing was acknowledged to be the best that could be given any pre-service candidate. But he wasn't getting this from his university!

One cannot put "new wine into old wineskins". Only a fraction of 'old' practicing teachers receive the 'good news' of modeling instruction. But 'new' teachers have less experience with the 'taste' of the 'old wine', the same flavor no doubt, that Malcolm Wells thought was good enough until he saw his own student's conceptual shortcomings. Thankfully, he had the humility to seek out why this was so, and become transformed! *Let us not be hesitant in accepting pre-service teachers. Let us encourage our universities to partner with us to train our next generation of educators in our 'learning laboratories'.* Yes, it will take more direct involvement (a teacher, teaching a pre-teacher, teaching our children), but the results create a ripple whose influence is endless...

Date: Tue, 8 Apr 2003

From: WILLIAM JAMESON <WJAMESON@DEFOREST.K12.WI.US>

I student taught in a Modeling classroom, without any background in Modeling.

I re-learned tons of physics from the experience. My cooperating teacher had me take the FCI with the kids (I didn't get a 30, which, being a cocky kid, I thought I would), and then I re-took it at the end of the semester (I got a 30 then).

I had not been taught much pedagogy in my teacher training, and what I had matched up nicely with Modeling.

I took the Modeling workshops a year later, after my first year teaching.

I'd highly recommend that any modeler who can should take on student teachers, at the very least because the student teacher will learn some physics from the class, and at best to show them how effective Modeling is, so that the student teacher will seek out further training in Modeling.

Date: Wed, 9 Apr 2003

From: Marc Reif <mreif@CPSED.NET>

I've never had a student teacher, but I "mentored" a new teacher this year. He had no classroom experience. He agreed to try modeling, and has had a great year (I'm pretty sure he thinks so, too:). I was worried about it at first, and a few people tried to talk me out of it (including a university education professor), but it has worked out exceptionally well. Having the modeling curriculum to work with made a lot of things easier, and although the questioning

was uncomfortable for him at first, his skill developed over the year. He has become an excellent teacher. I still think it would benefit him to go to a workshop.

After this experience, *I wouldn't think of mentoring someone or having a student teacher without incorporating modeling or one of its relatives.*

Date: Wed, 9 Apr 2003

From: Jane Jackson <Jane.jackson@ASU.EDU>

I knew that Betsy Barnard (Phase 2 Leadership Modeling Workshop at ASU) had co-taught a 'methods of teaching science' course at the University of Wisconsin - Madison. So I asked her to describe how she got the job. She replied as follows.

Date: Tue, 08 Apr 2003

From: BETSY BARNARD <bbarnard@wisc.edu>

Hi Jane,

Peter Hewson, who was my methods teacher a decade ago and who has been involved peripherally in our local physics alliance, called me and asked if I would do a 6-session stint in his methods class a couple years ago - with the emphasis on modeling and technology. This is a one-night-a-week, 3-hour class that student teachers take while they are doing their student teaching. We did the energy unit. The next semester John Rudolph taught the class and asked me to do a 3-session unit. Again I did pie charts, Hooke's law, and abbreviated the rest of the unit. This year, John asked me again to do a 1-session unit (I guess modeling is shrinking!!) - I only did Hooke's law.

Anyway, **my impression is that the student teachers enjoyed learning in a way that models how they could be teaching in the classroom, rather than just having readings, discussions and perhaps guest speakers, which is often the case in education-type classes.** I didn't receive any formal evaluation so I don't know for sure. In no way did these teachers get the kind of experience that a teacher gets from 3 weeks in Arizona, but they at least got a tiny glimpse.