DOINGWHATWORKS

Video
FULL DETAILS AND TRANSCRIPT

Improving High School Instruction

Waterford High School, California • June 2008

Topic: Turning Around Chronically Low-Performing Schools
Practice: Focus on Instruction

Highlights

- Having a clear instructional objective every day is important for both the teacher and the students.
- The teacher must develop strategies to check for student understanding.
- One effective way to monitor student learning is to consistently call on students who are not raising their hand or otherwise volunteering answers.

About the Site

Waterford High School
Waterford, CA

Demographics
55% White
40% Hispanic
1% Asian
1% Black
46% Free or Reduced-Price Lunch

13% English Language Learners
9% Special Education

Waterford High School had several components to its successful turnaround process:

- Collaborative agreement on the school's mission statement, which includes the school's vision, beliefs, and expected student outcomes
- Collaborative decision-making processes as part of creating new instructional norms for the school
- Use of a data-driven approach and collaboration among teachers in planning instruction

Full Transcript

My name is William Frey. I am a high school science teacher and the Science Department Chair here and I am also an instructional coach.

I think across the board, and when I talk to other teachers and share with them how my instruction has been impacted, the things that most improve instruction are having an objective, a real clear objective. I think that's good for the students, that's good for the teacher to know exactly where they are going, what the plan is. And it's different from an agenda, it's not an itemized "Here's what we're going to do today." It's "Here is the task we're going to accomplish today, here's what you're going to be able to do by the end of today's lesson," and having that firm objective gives the students the realization at the end that, "Yeah, I learned this." Or maybe sometimes, "Yeah, I didn't learn this yet, but I need to." And it gives the teacher the sense of satisfaction like "Okay, this is what I wanted to teach today and yes, I got it done" and some real—a clear goal and a clear way to measure whether or not you reach that goal.

And the other thing, I think the second most important thing, the thing I could not teach without, is checking for understanding, strategies to do that. How do you check constantly on how your students are doing? How do you keep them engaged and accountable? How do you—using whiteboards to have them respond to you? Very useful. In a lot of classes, all kinds of subject matters, but especially in chemistry and biology, I find them very useful and I know they are used well in math and physics, as well, and in history and English. So, whiteboards are useful. The popsicle sticks, calling on non-volunteers, gave me so much more insight into where my students were. And it's okay, and that's the thing that students realize, too. It's okay if they don't know the answer to a question. I will come back to them, but it keeps them more accountable. They know if I call on them, it's not because I am picking on them. It's because I want them to know the answer and if they don't know, I will come back to them. And that shows them that I care about them learning the stuff. They feel like they are valuable, that they are not being left off to the side and so, that's huge right there: non-volunteers and whiteboards and different methods for checking for understanding.

Frey interacting to class: Okay, very good, okay, on the count of three, hold up your whiteboards, please. One. Two. And three. Okay. Very good. We're about 75, maybe 80 percent; couple people didn't quite get it

right, but have the main part right. By the way, this is way harder than anything on the final, so you're good. Okay, I'm going to call on some people. Walk me through the steps, please. First step, [reaches into cup for a labeled popsicle stick with a student's name on it] Jose, will you walk us through the first step?

Jose: Count the main chain.

Frey: Okay, count the main chain. How many do we have?

Jose: Seven.

Frey: Seven in the main chain. So, that gives us what prefix?

Jose: Hept-.

Frey: Hept-. Very good. Now, what's the ending? What's the ending of this one? Is it -ane, -ene, or -ine? [pulls new popsicle stick.] Tyler, what's the ending of this one?

Tyler: [Not understandable.]

Frey: Say it really loudly.

Tyler: -ene.

Frey: -ene is right. Why is it -ene?

Tyler: It's got double bonds?

Frey: Because it's got double bonds, that's right. Okay, now, we have to describe where those double bonds are. Where are those double bonds located?…

Students definitely have—I think, in general, in the large population, are not as responsive or as engaged in lessons as they could be or need to be. I think that's something that may have always been the case, actually. We all have a tendency to daydream and do whatever during class. But the fact, at first, they are like "Wow, what is this, they are calling on me." And some students, of course, the first couple of weeks, they are going to see if this is really going to happen, are you really going to go back to them? So, they will do all kinds of strategies, work-avoidance strategies, where they are going to pretend they don't know the answer and say, "I don't know," But then you come back to them, and it doesn't become cool to say "I don't know" three or four times in front of your peers. And they figure out that if you're legitimate and you're sincere about wanting them to know the answer and be able to rearticulate that answer, that they can't get off the hook. And that's the key; it's just really coming back to them and coming back to them again. So it was a learning process, and teachers had to learn as well that here's what the students are going to do. And I've heard sad stories of teachers who tried out the whiteboards, who tried out the popsicle sticks only for a week or two, and they gave up on it after that. So I said stick with it, keep those strategies going. Keep trying them because they will work eventually, especially if you are consistent with it.

Frey interacting with class: How are you going to remember—on the test, on the final—how are you going to

remember the difference between an ester and a carboxylic acid? So, go ahead, come up with a, think of a way to remember the difference between, because those are the ones that you'll get confused, I would imagine. How are you going to remember the difference between an ester and a carboxylic acid? You don't have to write it down. Just think of your answer. I'm going to popsicle stick you in a second. How are you going to know the difference between an ester and a carboxylic acid? Okay, here we go. Quiet down now.

How are you going to know the difference between an ester and a carboxylic acid? [Pulls popsicle stick out of a cup.] Mr. Vela?

Vela: One has an extra O?

Frey: One as an extra O, okay. I think they have the same number of Os, but that's all right, I'll come back to you. Maybe someone else will have a good idea for it, okay. Let's go to Courtney, how are you going to remember?

Courtney: Carboxylic has OH and ester has OR.

Frey: Okay, good job. So carboxylic has the OH group off of it and ester has the OR, okay?

What does meaningful collaboration mean? That students can talk to each other. We noticed that in classrooms, students were becoming productive. They were really holding up the whiteboards, but they weren't interacting with their peers a lot. And so, working on different strategies to have students talking to each other, sharing the information, knowing that students who teach something to a peer, remember 90% of what they have learned versus 20% in an ordinary circumstance.

Next year, we are thinking about doing higher-order questions, how we are going to bring higher-order thought and processes and higher-order questions and tasks to the students, because we can't keep everything low level. We want to have some syntheses and some evaluations, some application going on in our classrooms. And so, that's the next thing. So, definitely, talking to Mr. Davis. He has an open-door policy, so we are all in there all the time talking about instruction, which used to be this like sacred thing that you didn't talk about. You definitely wouldn't talk as a teacher to your principal about it, which is kind of ironic. But that was something that never really happened in any other of the schools I have worked at. But here, it's something that is shared quite readily. We share ideas and it's great.