



Science 2.0

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“Flipping” Your Classroom

“I got stuck.” “It wasn’t like the problems you showed us in class.” “I didn’t get it.” How often do you hear these responses when asking students about their homework? How many times have you wished you could help confused students as they were doing their work—instead of trying to pick up the pieces the next day?

A few years ago, two chemistry teachers, Aaron Sams and Jonathan Bergmann, were asking themselves these same questions. Their solution was to ask yet another one: “What do [students] need us to be physically present for?” The answer led them to “flip” their teaching—a strategy in which they still provide direct instruction, but not during class. Students watch online lectures at night and teachers spend class time connecting individually with students—through hands-on activities, projects, and tutoring.

“The key ingredient in this model is that teachers no longer lecture,” Bergmann explains. “The direct instruction is done via video podcasts made by the teachers. Moving the 30–50 minute lecture outside the classroom frees up teachers to help students master the key concepts in each course.” Students are able to watch lectures outside of class, and during class time, they receive the help they need to understand the material.

Bergmann and Sams’s flipped classroom model has created a classroom structure that allows students to take responsibility for their learning both inside and outside the classroom. Teachers using the flipped model find that they serve as mentors rather than lecturers. They have time to provide individualized support to all of their students.

Bergmann shared this comment from a teacher he worked with, “I no longer go to work to ‘perform’ five times a day; instead, I look forward to going [to class] and interacting with my students all day.” Students work at their own pace as they watch video podcasts (vodcasts), work on assignments, complete laboratory activities, interact through web-based discussion boards, and master course objectives through one-on-one discussions with their teacher.

Bergmann explains the many benefits to flipping your teaching: It frees up more class time for doing hands-on activities and helping students work through concepts they do not understand. As you become more comfortable, the individualized structure allows students to take more responsibility for their learning. Student learning deepens as student-to-student and individual student-to-teacher interactions increase.



Begin by finding high-quality videos or create your own using presentation (e.g., Microsoft PowerPoint or Keynote) and screen-capture software (e.g., Camtasia or SnapzPro). You can then upload these videos to a media-sharing website such as YouTube or Vimeo (see “On the web”) or burn them onto DVDs. It takes time to find or create videos, but your library will grow over time.

Bergmann and Sams suggest that you find a partner to collaborate with while making videos. Connect with other teachers who have flipped their classrooms by searching for #revlearn on Twitter or joining approximately 300 educators on the Teacher Vodcasting Network (see “On the web”)!

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On the web

- ◆ Bergmann and Sams’s webpage: <http://mast.unco.edu/vodcasting//index.php>
- ◆ Teacher Vodcasting Network: <http://vodcasting.ning.com>
- ◆ Twitter: www.twitter.com/@jonbergmann
- ◆ Vimeo: <http://vimeo.com>
- ◆ “The Vod Couple” article: <http://thejournal.com/Articles/2009/08/09/Vodcasting.aspx>
- ◆ YouTube: www.youtube.com/learning4mastery

For more on teaching with technology, visit the Science 2.0 blog at www.nsta.org/2.0.