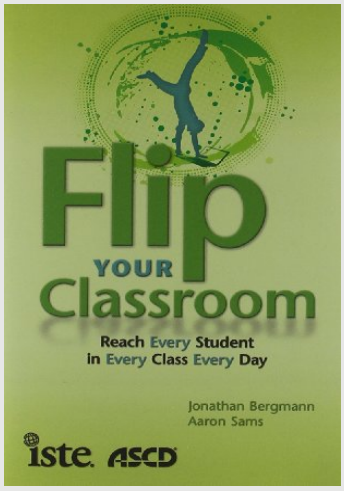

Flip Your Classroom

Reach Every Student in Every Class Every Day

Jonathan Bergmann and Aaron Sams
ISTE and ASCD © 2012
100 pages
Book: getab.li/20718

Rating

8

8 Applicability
9 Innovation
8 Style

Focus

Leadership & Management
Strategy
Sales & Marketing
Finance
Human Resources
IT, Production & Logistics
Career & Self-Development
Small Business
Economics & Politics
Industries
Global Business
Concepts & Trends

Take-Aways

- The "flipped classroom" is not a formal protocol, but a mind-set: Education should focus on students and not on teachers performing daily in their classrooms.
- Under this system, teachers are tutors, not lecturers.
- A working definition of the flipped classroom is "that which is traditionally done as homework is now completed in class."
- Students "receive content on their own" by watching lectures outside class on DVDs or online. In class, they do experiments, get help and do their "homework."
- Flipping the classroom also means "using the entire class period to help students with the concepts they don't understand."
- Teachers have much more time available to assist students individually.
- Though students spent less time in class, test results indicate they were learning more.
- The enhanced "flipped-mastery" approach lets students manage their own education.
- Video lessons can be utilized as background information for substitute teachers and as primary learning information so teachers can increase their own knowledge.
- The flipped classroom is "scalable, reproducible, customizable" and economical.

Relevance

What You Will Learn
In this summary, you will learn: 1) What the "flipped-classroom" approach involves, 2) How to expand it into the "flipped-classroom-mastery approach", 3) How and why both these methods work, 4) What their benefits are, and 5) How to implement them in educational practice.

Review
In 2007, two Colorado high school chemistry teachers, Jonathan Bergmann and Aaron Sams, developed an ingenious pedagogical approach – a variation of the "flipped classroom" – that improved the educational experience of their students and caught on with other educators in Colorado and around the globe. The teachers also explain their groundbreaking "flipped-classroom-mastery" system in an unpretentious, easy-to-follow manual. Though the book doesn't apply its method to corporate learning, *getAbstract* recommends this straightforward, clear-headed presentation of the authors' approach to teachers in any setting.

Summary

"Somewhere in human history, the lecture wedged its way into our instructional toolbox and schools have been digging their way out from under its oppression ever since."

"Many struggling students who genuinely want to learn fall behind instead. Others are so busy that they miss out on key concepts. Still others learn how to 'play school,' but never really learn important objectives in their courses."

"The Flipped Classroom"
Enrique cannot keep up with his teachers. They speak too fast for him. He can't take notes quickly enough to follow their lectures. He works hard but isn't learning. Janice is a busy student-athlete. She runs track, and plays basketball and volleyball for her high school. She works hard also but is falling behind her classmates because of her busy schedule. Rural students who participate in athletics often spend hours on buses traveling to so-called "nearby" games and miss many classes while on the road. Naturally, despite their best intentions and hard work, they fall behind. On the surface, Ashley seems a perfect student. She does everything her teachers ask and gets good grades. However, she simply goes through the motions and is not learning anything other than how to manipulate the educational system.

These stories are distressingly typical. Many high school students struggle to learn and want to learn, but various circumstances – often outside of their control – get in the way. How can schools help them learn more effectively? The flipped classroom, with its focus on students and not teachers, is the answer. Utilizing this approach, teachers spend classroom time helping students, who listen to or watch recorded lectures on their own time. This novel teaching method works for any subject, including "math, science, social studies, language arts, physical education, [English Language Learners] (ELL), a foreign language" and "humanities."

Woodland Park High School
Jonathan Bergmann and Aaron Sams developed their own version of the flipped-classroom approach while working as chemistry teachers at Woodland Park High School in Woodland Park, Colorado. Together, they set up chemistry lessons and lab demonstrations in their rural school.

The two teachers developed their method in 2007 after Sams read an article in a tech magazine showing how to record PowerPoint presentations – "including voice and any annotations" – and how to transform the recordings into video files and upload them to

the Internet. This was in the early days of YouTube, when videos were a new, increasingly popular online feature.

"There is no such thing as the 'flipped' classroom. There is no specific methodology to be replicated, no checklist to follow that leads to guaranteed results."

Bergman and Sams understood the potential of online teaching videos for helping students who miss classes. They started using screen-capture software to record their chemistry lectures and uploaded the videos for students to view at their convenience. Their online lectures became popular. Many students who attended the original lectures watched them repeatedly to prepare for exams. The two teachers no longer lost time re-presenting the same information over and over to students requesting help.

New Classroom Approaches

Chemistry teachers and students around the world accessed the lectures and contacted Bergmann and Sams to thank them. Teachers used the videos different ways, including as background for substitute teachers and as primary learning information to increase their own knowledge. Although fame was not their goal, Bergmann and Sams suddenly became popular in high school chemistry circles worldwide, and their little rural high school in Colorado became equally well known.

"If flipped mastery can be successfully implemented in a small town, with no resources, in a dangerous chemistry class, it can be implemented anywhere."

Sams had a simple, brilliant insight: "The time when students really need me physically present is when they get stuck and need my individual help. They don't need me there in the room with them to yak at them and give them content; they can receive content on their own." Sams built on this basic idea: "What if we prerecorded all of our lectures, students viewed the videos as 'homework,' and then we used the entire class period to help students with the concepts they don't understand?"

To put their special adaptation of the flipped-classroom model into use, Bergmann and Sams set out to prerecord all their 2007-2008 school year chemistry lectures. Students viewed the lectures and took notes on them at home. During the school day, the teachers led chemistry lab experiments, using the same procedures as before, and worked with their students. Chemistry students spent "95 minutes every other day" with the two teachers.

"The present model of education reflects the age in which it was designed: the industrial revolution."

Because their lectures were prerecorded, the teachers had much more time available to help struggling students. Bergmann and Sams completed their classes, on average, 20 minutes earlier. This worked out nicely for them and their students. Students did not spend as much time in chemistry as before, but their test results indicated that they were learning more than in the past.

Other secondary schools and colleges asked Bergmann and Sams to explain their approach. Before long, they were speaking at education conferences and other venues "across the United States, Canada and Europe" and were featured on TV. Their flipped-classroom approach was big news because it proves to be "scalable, reproducible, customizable" and economical. A working definition of the flipped classroom is "that which is traditionally done as homework is now completed in class."

"Introducing a flipped class is often a radical enough change that some may be hesitant to alter an existing grading system."

A Mind-Set, Not a Protocol

For Bergmann and Sams, the flipped classroom is not a formal protocol, but a mind-set: Education should focus on students, not on teachers performing daily in their classrooms. Teachers must ensure that all students know how to access and watch the videos. Students should get in the habit of rewinding videos to review sections they might not fully understand and they should "pause" the videos frequently to take notes. At the beginning of each class, Bergmann and Sams briefly discuss the previous night's video, which they

had assigned as homework. They answer questions, give out problems to solve, assign lab projects and administer tests.

"A flipped-mastery classroom takes the principles of mastery learning and marries them with modern technology to make a sustainable, reproducible and manageable environment for learning."

Because classes last 95 minutes, students can complete several tasks, while Bergmann and Sams spend the time functioning as tutors. They conduct mini-lectures with multiple students who struggle to understand the same points. The flipped-classroom approach offers increased opportunity for "student-teacher interaction." Because of its high-tech aspects, flipping is popular with today's tech-minded students. Flipping helps teachers learn more about their students, improves classroom management and supports substitute teachers.

Personalization

Teachers have always wanted to offer personalized education. The traditional educational setting does not lend itself to instruction for individual students. In the usual assembly-line system, students sit in rows as they listen to teachers discuss specialized topics. Afterward, they take exams to demonstrate their knowledge. This system allows only mass experiences – every student receives the same basic education. But students are all different. What works for some won't work for others. The flipped-classroom approach turns the traditional educational experience upside down; it enables teachers to personalize their students' educations and teach according to each student's particular needs.

"The single most daunting task teachers face when trying to flip the classroom is accessing or producing high-quality videos."

Implementation

Flipped classrooms don't necessarily have to include videos, but utilize them if they work for you. Show videos that other teachers have created and posted or make your own. If you do the latter, consider the Camtasia Studio screen-casting program. It records everything you put on screen, including your voice, your face and your digital-pen annotations. You can add "picture-in-picture, video clips and other postproduction items." You need a microphone and a webcam – these are built into most laptop computers – and recording software. Choose something that offers picture-in-picture capability.

"The logistics of personalizing 150 different educations each day seems insurmountable to most teachers."

Plan each video with care. For the recording session, sit in front of your computer or your "interactive white board." Then, simply "'teach' the lesson to your absent audience." After you record your video, edit it.

For publishing, use a variety of distribution methods – the Internet, DVDs, and so on. Your videos should last 10-15 minutes. Include another teacher on your video, because students enjoy dialogue. A little humor makes your videos more watchable. Be alert to any possible copyright violations when using published classroom materials, like textbooks.

"The Flipped-Mastery Class"

Bergmann and Sams enhanced their flipped-classroom approach to include "mastery-learning environment" elements, featuring students in charge of their own education, learning at their own individual pace. Over time, the teachers developed an extensive "library of instructional videos" that students could watch and absorb on their own schedules. The mastery model places learning at the heart of the classroom and students at the heart of learning.

"Watching an instructional video is not like watching an entertainment movie or a TV show."

The flipped-mastery-class format enables students to move through classes at their own speed as they master information. Thus, the approach transforms students into self-directed learners. Teachers leverage technology; students learn together or work by themselves at their own pace; the teacher evaluates student progress and understanding; and students demonstrate mastery of their learning goals.

This method requires expert teachers who avoid conveying the impression that they know everything. Instead, they teach students how to research answers they don't know. Teachers must be ready to move through the classroom assisting students as needed – and they must make the adaptation of turning the learning process over to students. The flipped-classroom-mastery model helps students assume responsibility for their own education. This model is not for teachers who have issues about maintaining control.

"One of the benefits of the flipped-mastery model for the students is that they are not allowed to turn in junk."

The mastery model provides students with immediate feedback. It cuts down on teacher paperwork. It enables teachers to provide remediation quickly to students who are having trouble mastering the material. It provides learning content in different formats and features several ways students can demonstrate their comprehension. These methods include "summative unit exams, verbal discussions, detailed PowerPoint presentations, short videos, demonstration of understanding written in prose" and "other methods developed by the students." Teachers create "multiple versions of each summative assessment" using a "computer-generated testing system."

In a flipped-mastery class, the teacher establishes learning objectives for each student, and determines if inquiry or direct instruction will work best for each. The teacher also makes sure students can access all the necessary videos and offers classroom learning activities. Teachers appreciate that the flipped-classroom approach gets students actively involved in their own learning.

"The role of the teacher in the classroom is to help students, not to deliver information."

Implementation

On the first class day, explain the mastery program to your students and their parents. Help students learn to ask compelling questions. Change the classroom layout so the locus is the middle of the room – where students speak to each other – and not the front. Put students in charge of their own "time and workload." Ask them to help each other. "Students realize they are better when they work as a team rather than when they work alone."

Develop "an appropriate assessment system." Create assessments that discern students' understanding of the material. Require students to show that they are learning. "A standards-based grading" system works well in the flipped classroom model. To make sure all students watch the videos, provide access for students to view the videos in the classroom if they can't watch them at home.

"When we communicate to parents the advantages of the flipped mastery model, they see how their children will benefit, and parents are generally in favor."

Tutor, Not Lecturer

Lectures – on video and in class – will continue to play an important role in teaching. Use your classroom time to help individual students as a tutor, not a lecturer.

Parents like this system. Students love it because it empowers them, lets them learn material more comprehensively and puts them in charge of their own education. In all those regards, it prepares students for a world where self-learning is increasingly important.

About the Authors

Colorado high school teachers **Jonathan Bergmann** and **Aaron Sams** received the Presidential Award for Excellence in Math and Science Teaching.