

The Flipped

flipped classroom *n.* A model of teaching viewed outside of class on a video. Class time what would traditionally be viewed as students'

In 2007, science teachers Jonathan Bergmann and Aaron Sams at Woodland Park High School in Woodland Park, Colorado, started recording lectures for students to watch as homework and using class time to guide students as they worked on assignments, creating the flipped classroom model. Since then, flipped classrooms have been popping up in schools throughout North America. In fact, departments – and even entire schools – have begun using the flipped classroom model. Teachers say that “flipping” helps students develop a deeper understanding of classroom materials, reduces failure rates and improves test scores.

The Traditional Classroom

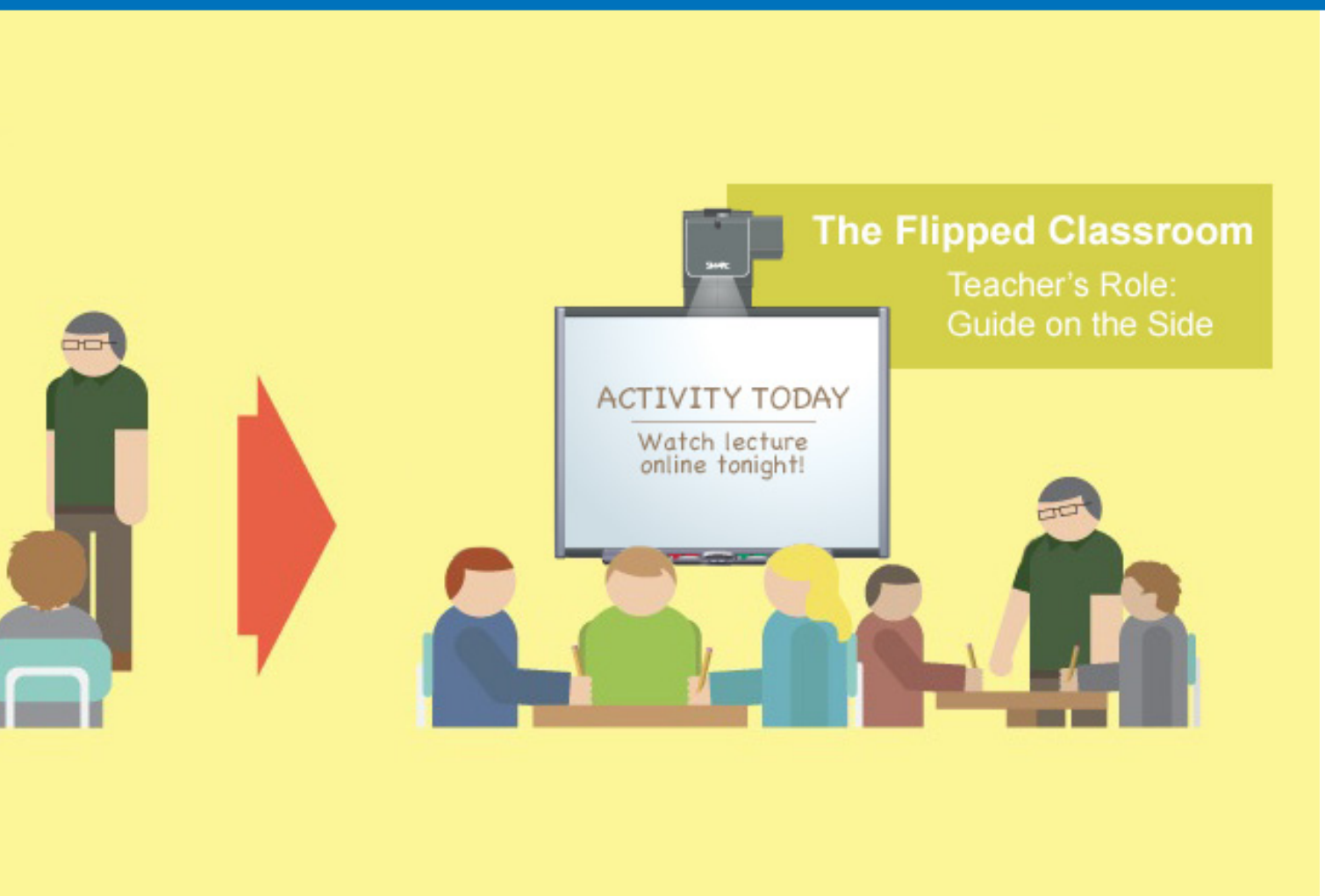
Teacher's Role:
Sage on the Stage



By Wendy McMahon

Classroom 101

in which students' homework is the traditional lecture is then spent on inquiry-based learning that would include homework assignments.



The basics of the flipped classroom

Bergmann, who is now the lead technology facilitator at Joseph Sears School in Kenilworth, Illinois, says the basic premise of the flipped classroom is simple. “Make videos, make them available to your kids and do what you wanted to do with your kids in the first place.”

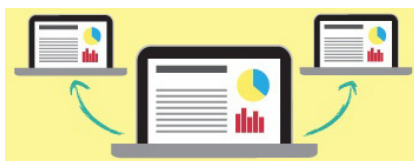
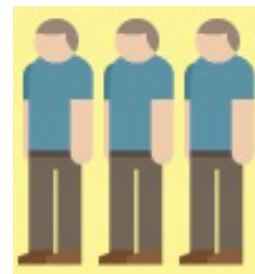
Although the options for personalizing your flipped classroom are almost limitless, following are the basics of flipping:



Create short videos – 15 minutes or less – of your lectures. You can take actual video of yourself delivering a lecture or use tools such as SMART Recorder in [SMART Notebook collaborative learning software](#) to create a screencast of lecture notes accompanied by your voice. Because you won't need to pause for questions, discussion or practice time, 15 minutes should be enough time. Alternatively, you can use videos created by other teachers on websites such as [Khan Academy](#), [Flipped Learning TV](#) or the recently launched [TEDEd](#) resource.



Determine how many students have high-speed Internet access at home and provide alternative methods for those who don't have access. Bergmann and Sams have burned their videos to DVD for some students, while other teachers have allowed time before and after class for students to watch videos on a classroom computer, iPod or iPad.



Post the videos online so students can access them. You can use [YouTube™](#), [Vimeo](#) or your school network – whatever works. Students must be able to access the videos during and after school hours.



Develop a student-centered classroom where you use class time to assess, support and encourage learning as students work through related assignments, projects and labs.

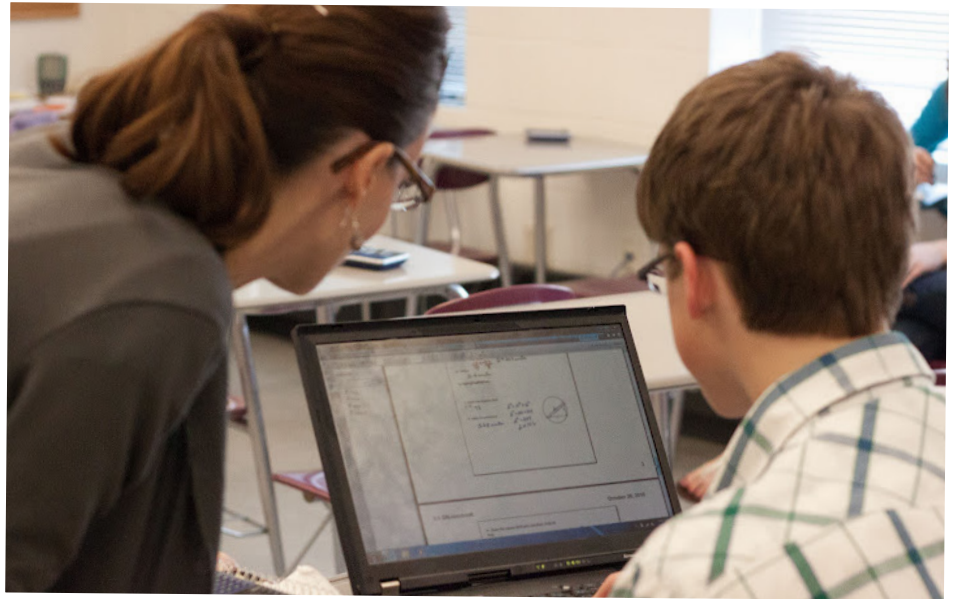


There is no
"right" way



According to Bergmann, many teachers who want to flip their classrooms are unsure of the "right" way to do it – they don't know what should be covered in the video and in class. Because flipping is a model that can be personalized, Bergmann helps teachers determine how *their* flipped classrooms could look. "This is the question I almost always lead with now during a presentation – 'What is the best use of your face-to-face class time?' Answer that question and then figure out if there is something you can offload to be taught somewhere else."

For physical education teachers, this could mean using class time strictly for physical activity and then covering lessons in a video. English teachers trying to fit grammar lessons into class time could have students view video lessons at home. And physics teachers could cover the day's lesson with a video and use class time for a hands-on lab, providing extra time for answering questions, checking student work and ensuring everyone understands the concept.



The flipped classroom in action

Troy Faulkner, a teacher and head of the math department at [Byron High School](#) in Byron, Minnesota, has been flipping his classrooms for two years. During the past year, the entire math department has switched exclusively to the flipped classroom model, with other teachers throughout the district moving in the same direction.

As Faulkner explains, teachers in his department use SMART products to support their flipped classrooms. They use SMART Recorder in SMART Notebook software to create lecture videos that record not only their voice but also anything they do on their computer. Some teachers do this using their SMART Board interactive whiteboard while others use the [SMART Slate™ wireless slate](#) to write notes and record lessons at home or at their desk. Teachers then post their lectures on YouTube, embedding them in [Moodle™](#) for students to view at home without the distractions of the YouTube site.

Teachers also use [SMART Document Camera](#) to show related visuals or student work and the [SMART Response XE interactive response system](#) for formative assessment during class time.

Faulkner says SMART Response XE has been the key to his school taking the flipped classroom model to the next level. "With the flipped classroom, there is a lot of collaboration that occurs in the room

FEATURE ARTICLE

between students, so it is important to have a small amount of time during class where students are working on problems by themselves, without the help of notes and others – hence the formative quizzes.”

Students typically arrive in Faulkner’s class to find two or three problems written on the **SMART Board interactive whiteboard**. The problems are designed to check students’ understanding of the material from the video or material covered the previous day. As students work on their math “homework,” they aren’t sitting at the kitchen table struggling to complete an assignment alone. Instead, they’re sitting in the classroom, with easy access to support from their teacher and peers. Students are free to discuss, debate and work out the problems with their peers. They can form their own groups, rearrange their desks – whatever helps them work best. If there is a concept that many students are having difficulty with, Faulkner will go to the SMART Board interactive whiteboard and discuss it with everyone.



For Faulkner, being available to students is the key to a successfully flipped class. “It’s very important that teachers are out there with the students the whole time and not at their desk, because students are more likely to ask you a question if you come walking by them.”

Faulkner says the flipped classroom helps students learn at their own pace. “It’s great for high flyers who can zip through, while those who struggle can pause and rewind as much as they want.” As a result, he’s noticed that students are taking more ownership of their learning.

Student-centered learning

At **Allen ISD** in Allen, Texas, instructional specialist Jason Baughman has helped flip 37 classrooms during the 2011–12 school year. Teachers in flipped classrooms either record their lectures with a webcam or create screencasts using their SMART Board interactive whiteboards and SMART Recorder.

Baughman says flipped classrooms shouldn’t just consist of students sitting at their desks doing homework. “Sometimes you’re working through problems in math and science, but that’s not always the focus.”

Instead, teachers who are flipping their classes need to create a student-centered classroom. “It’s not about the teacher standing up and delivering a lesson anymore – it’s about the students understanding the content. Teachers need to ask themselves, ‘How am I going to be a facilitator as opposed to a lecturer?’”

To do this, Baughman tells teachers to think through a series of questions when they are planning class time. “Ask yourself, ‘How can I get the students to be involved? How can I get them to create a product that shows that they have learned this content? And how can I get them to teach the other students in the class using that product?’”

The flipped classroom gets results

How does a flipped classroom actually affect learning? Bergmann, Faulkner and Baughman all report seeing higher test scores since implementing the flipped classroom model.

Baughman says the algebra and physics departments at Allen ISD have kept data, and they've discovered a decrease in failure rates and an increase in the number of A's and B's their students are achieving.

At Byron High School, Faulkner says the number of A's and B's is dramatically increased for students in the flipped classrooms. Geometry failure rates have decreased from 13 percent to 6 percent, and, last fall, there were no students with D's or F's in the algebra 1 class. "We've never had a class before where we had no D's and F's, so that was exciting to us," says Faulkner.

For Bergmann, the magic of the flipped classroom is that students start taking control and ownership of their own learning. "The teacher's job in the flipped classroom is to walk around helping students. As you help kids, the kids realize that they actually have to learn the content."

When he was teaching in a flipped classroom, students were required to take tests at the end of a unit to show they had mastered the content. If they hadn't, they were required to repeat the unit.

"It was frankly the best thing we taught them. It wasn't the chemistry or whatever topic I was teaching at the time. It was, 'I've taught them how to learn.' And I think that's the more valuable lesson. Because in this information-saturated world, it's more important to learn *how* to learn than it is to learn a particular topic that may be outdated or changed soon."

Want to learn more?

There are plenty of opportunities to learn more about the flipped classroom, including the recently launched [Flipped Learning Network](#), created by Bergmann and Sams. This nonprofit site is designed to be the primary resource for teachers wanting training on the flipped learning model. Bergmann and Sams have also written a guide to flipped learning, [Flip Your Classroom: Reach Every Student in Every Class Every Day](#), scheduled for release this month.

Further resources

- [The Flipped Learning Network](#)
- [The Flipped Class Network](#)
- [Jonathan Bergmann's blog, Flipped Learning](#)
- [Byron High School flipped classroom website](#)
- [Jason Baughman's flipping best practices](#)
- [The flipped classroom infographic](#)

Best practices

- Introduce parents to the flipped classroom with an e-mail, letter or video
- Create videos that are no longer than 15 minutes
- Get buy-in from administration
- Don't sit at your desk during class time – walk around and be available for students
- Provide alternative methods for viewing videos for students with limited or no high-speed Internet access
- Assess your students regularly
- Build accountability into watching videos using online forms