the flipped classroom

By Jon Bergmann and Aaron Sams

The flipped classroom concept has been around for a number of years, and it has garnered much attention from educators around the globe. We began using teacher-created video as an instructional tool in 2007, and we have since been regarded as some of the pioneers of the flipped classroom. In this article we hope to draw from our experience as educators and share some of the successes and failures we have encountered through the process of developing our flipped classrooms.

As pioneers and prominent voices in the flipped classroom conversation, we are often asked to define exactly what a flipped classroom is. This has been difficult because a flipped classroom looks different in every instance. A fourth-grade teacher will implement a flipped classroom differently than a high school English teacher. A flipped classroom really starts with one simple question: What is the best use of your face-to-face class time? Since each teacher will answer that question in a different way, there is no such thing as one definition of the flipped classroom. However, some commonalities can be seen across the educational spectrum, and we refer to these commonalities as "Flipped Class 101." In Flipped Class 101 direct instruction (lecture) is delivered at home via videos that teachers either create or curate, and that which has traditionally been done as homework is done in class. This flip of the time and place that lecture and homework are delivered is the most rudimentary form of the flipped class. There is value in this simple flip that has helped many teachers transform their classrooms into centers of learning and engagement.

Benefits of the Flipped Classroom

Students Get Help on Difficult Topics

One of the challenges in a traditional classroom, when instruction is delivered through a lecture, is that students are often sent home to apply what they have learned without any assistance. At home students can often get stuck and cannot complete the assigned homework. At this point the students have a number of options. They can spend hours wrestling with an assignment they are not prepared to do, give up, call a friend, ask the teacher the next day, or in the worst case, cheat. In a flipped classroom, the work done at home is simply to view a video, and when the student is struggling with what was traditionally sent home as homework, the teacher is present to help because this higher-order thinking is done in class.

The Teacher-Student Interaction Is Enhanced

Let's face it; direct instruction (lecture) can often be a one-way communication. The teacher stands at the front of the class and delivers content. When done well, this *can* be a rich dialogue, but too often it is simply a teacher talking or giving a presentation while the students all dutifully take notes. Moving the direct instruction outside of class time frees up more time for teachers to interact one-on-one or in small groups with students. Ideally, a teacher in a flipped classroom is able to talk to every student in every class every day.

It Allows for Differentiation

We were really not that good at differentiation before we flipped our classrooms. But since we were able to meet with each student every day, we were able to individualize instruction to meet the individual needs of learners. Those students who struggle got the attention they needed, and the students who were excelling were given the appropriate challenge to take them to the next level.

It Creates an Atmosphere of Learning

As we made the shift away from traditional instruction, we found that our classrooms were no longer places where information is disseminated but rather hubs of learning and inquiry. Since a flipped classroom involves the teacher interacting with each student, the teacher can help one student drill deeper into a subject while providing another with the appropriate support to become successful. This creates an atmosphere where learning, rather than teaching, is the goal. Students begin to take more and more ownership of their own learning. And if students take ownership for their own learning, they are no longer passive recipients of knowledge but active learners.

Students Can Learn at *Their* Pace

As teachers, we often speak too quickly. We know our content well, and we know how to convey it—or so we think. When we are teaching a specific topic, we often try to pace our instruction on the basis of the needs of the majority of our students. If we go too fast, then many students get left behind; if we go too slowly, we bore many. So we typically shoot for the middle. One thing very powerful about moving direct instruction out of the group class time and onto a video is the fact that students have control of the pause and rewind buttons. Students can pause the teacher who is speaking faster than they can process. Students can rewind and go over a difficult topic as many times as necessary instead of asking the teacher to go back to the previous PowerPoint slide. By creating instructional videos, teachers can help students learn at a pace that is most appropriate for each of them.

It Helps When Students Are Absent

A lot goes into preparing a lesson. Teachers spend a lot of time preparing a polished presentation, but invariably some students are out of class. The absent students ask what they missed, and this requires the teacher to reteach what had been painstakingly done in class. However, absent students in a flipped classroom never miss direct instruction. They will miss out on the engaging in-class activities, but the main content will have been covered on an asynchronously accessible video.

It Helps When the Teacher Is Absent

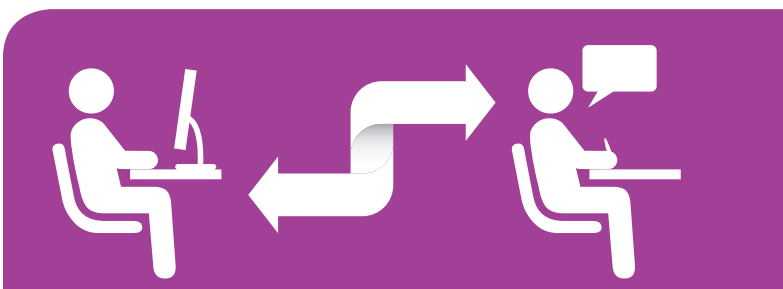
Teachers are often out of the building for a variety of reasons: professional development, illness, coaching, meetings, and so on, and it can be difficult to find qualified substitute teachers. Creating instructional videos is a great way to prevent students from getting behind. Even if you don't completely flip your classroom, you could create short videos for when you are gone and redeem the time you are out of your classroom.

You Don't Have to Flip Every Lesson

A flipped classroom is a flexible classroom, and the beauty of this flexibility is that you don't have to flip every lesson. Flipping only a few lessons is a great entry point into the flipped classroom. If you just flip a few lessons, we encourage you to pick topics that students struggle with. What is that one lesson in your course you find yourself repeating over and over again with students? That lesson is a perfect lesson to flip because not only will you have the lesson archived for quick retrieval and review by students, but you will be able to spend more time helping your students individually understand the difficult concept.

Relationships with Students Are Better

There is something about getting the teacher away from the front of the room that changes the dynamic in a flipped classroom. Moving the attention away from the teacher and onto the individual learner allows the teacher to know her students better than ever before, both cognitively and personally. When teachers are in among their students, conversing with them and listening to them, teachers get to know their students' struggles with content and can lead them to the place of the aha moment! As teachers are interacting more closely with students, they get to know them more as individuals. Teachers learn of their struggles, their hopes, and their fears. Teachers are



able to develop a mentoring relationship with students and are able to know them more, and thus teachers have more opportunities to care for them and reach out to them in their times of need.

Common Questions

We have presented the flipped classroom to many educators around the world, and a few common questions continue to be asked.

What if the Student Doesn't Watch the Video?

We know that not all students do their homework. If you implement a flipped classroom, this will not change. So what do you do with students who have not viewed and interacted with the video content? First of all, hold each student individually accountable for watching each video. We expected students to show us that they had watched the video, and we required students to take notes on the videos. To determine whether students viewed the material, we simply checked their notes the next day. Other teachers take a more technologically oriented approach to monitoring viewership by embedding questions into or alongside the video on a Web page. If students were not able to prove that they had interacted with the material, students would be sent to one of a couple of old computers in the back of the room where they watched the video while the rest of the class was receiving individualized attention and assistance or was engaged in the extension and application of the content. We found that students quickly recognized that it was more beneficial to watch the video than to not. This method did not get all students to do the homework, but we did observe more students completing the video assignment than the traditional work we sent home in a traditional classroom.

Who Should Make the Videos?

When we started flipping our classes in 2007, there wasn't a lot of quality video content on the Internet, so we made all of our own videos. In our chemistry classes, we created about 100 instructional videos for our students. But today, there are many videos out there made by great teachers. Should you use others' videos? Though it seems easier, we think it is best practice if teachers create their own videos. We say this because we believe that one key element to good teaching is the relationship between the student and the teacher. If you outsource the video, you will be missing out on a point of connection with your students.

How Long Should the Videos Be?

One of the mistakes we made when we first started flipping our class was making our videos too long. We have subsequently learned that shorter is better. Only put one topic on each video and teach directly to the point. Also realize that these videos are only going to cover basic information. Save the more difficult cognitive tasks and activities for in class. Our general suggestion is one minute to one and a half minutes per grade level. So, a fourth grader should have videos that are around four to six minutes long.

Can This Be Done on a Budget?

When we first started flipping our classes in 2007, we did it for around $50. We spent that money on some software and used computers that we already had. We taught at a rural school in the mountains of Colorado, and our school struggled financially, so we didn't have a lot of resources. Today there are free or inexpensive programs such as Screencast-O-Matic, Jing, and Snagit, which are easy-to-use programs to create the instructional videos. If you have an iPad, we like the apps Explain Everything, Doceri, and Educreations. All of these content-creation programs allow the video to be placed online and be viewed from any Internet-enabled device. A flipped classroom does not require expensive equipment, nor does it require each student to have a school-issued computer or device. In fact, most students probably already have the appropriate technology in their pocket or backpack in the form of a smartphone, iPod, or tablet. Students who don't have one of these devices can easily access content at their local library, school library, or other public venue.

Will It Increase Student Screen Time?

One concern we have heard from teachers and parents is that we will be increasing student screen time. Some argue that students are spending too much time in front of a screen engaging in unproductive, and sometimes damaging, activities. Will the flipped classroom contribute to this problem? Though we don't have hard evidence, we have asked a number of students this very question. Students have told us that watching the video content actually is replacing screen time that they would have used doing other less meaningful activities online. They also tell us that the flipped classroom saves them time because they are not stuck on their homework at home throwing up their

hands in exasperation because they do not understand it. Viewing a short video is a meaningful and manageable task that can be done with minimal supervision and support at home. Some parents even report enjoying learning right alongside their children by viewing the content with them.

What About Parents?

What do parents think of this "new" method? The key is to communicate with the parent community what and why you are changing how you are teaching. Send a letter home or explain it at parent-teacher conferences. Share with them the benefits of the flipped classroom. Some teachers have started flipping back-to-school night by creating a video explaining the flipped classroom to parents. When parents arrive at the event, they are able to ask questions of the teacher and discuss class procedures more directly. We have found that once the flipped classroom is explained to the parents well, they are eager to embrace it. Jon wrote a blog post to parents who find their children are in a flipped classroom; many teachers have used it to share with their parent communities. You can read it at http://bit.ly/teachersmatter.

What Will I Do with Class Time?

We once had a teacher come up to us after a workshop and tell us, "I love the idea. I want to flip my class, but what will I do with class time?" Essentially, she was telling us that all she had ever done in class was lecture. She couldn't figure out what to do with the class time if she didn't lecture. This is a very important question that we think you must answer for yourself. To help frame this question, we often ask teachers, "What is the best use of your face-to-face class time?" Once you have determined what that is, then you should do that, and only that, in your class.

Is Video Instruction Going to Replace the Teacher?

One of the concerns some have raised about the flipped classroom is that students will now be taught via computers, and the role of teachers will become diminished. If education were just about a transfer of knowledge, then students could all be taught via videos on the Internet. But we see education as complex cognitive interchanges between teachers and students in the context of caring relationships. This scenario could never be replaced by a computer. Human interaction is too complex, and it thrives on individual contact within a learning community. We believe that the teacher is actually more valuable in a flipped classroom. Content can be disseminated in a lot of ways, but the education we aspire to for our students goes far beyond just learning the facts. We want them to become engaged, thoughtful, moral, godly humans who can make an impact on the greater world.

Conclusion

The flipped classroom radically changed the way we taught. We were able to know our students better than ever before, and we were able to meet the educational needs of each student. We encourage you to consider flipping a few lessons or maybe to completely flip your class. We have been amazed at how this simple concept not only has helped our students but has made an impact on thousands of students across the globe. You can read much more in our book *Flip Your Classroom: Reach Every Student in Every Class Every Day* (ISTE/ASCD, 2012). We also encourage you to read more about what we call "Flipped Learning—The Next Stage of the Flipped Classroom." You can read more about this in our upcoming second book: *Flipped Learning: Gateway to Student Engagement* (ISTE, 2014).

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