

# My Top Ten Tips for Implementing a Flipped Classroom

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## A Definition

In a “Flipped Classroom,” students’ initial exposure to content is shifted outside of the classroom via readings, instructional videos, individual or collaborative activities, or a combination of these. Then during class, rather than lecturing, all or a significant portion of the time is used for practice, application exercises, discussion-based activities, team-based learning, or other active learning techniques. (Carnegie Mellon)

## Shifting Content

Alternatives for shifting content outside the classroom:

- ▶ Video lectures
  - ▶ Made by the instructor specifically for the class
  - ▶ Drawn from on-line sources
  - ▶ Provided by publishers
  - ▶ Some combination of the above
- ▶ Guided reading
  - ▶ Facilitated by reading outlines or worksheets
  - ▶ Enforced by reading quizzes (in- or out-of-class)
  - ▶ Necessary for meaningful participation in the day's class
  - ▶ Some combination of the above
- ▶ Individual or collaborative activities

Instructors may elect to shift some or all of the content outside the classroom.

## Use of Class Time

Alternatives for using class time:

- ▶ Practice exercises
- ▶ Discovery activities
- ▶ Discussion
- ▶ Case studies
- ▶ Debates
- ▶ Demonstrations
- ▶ Some combination of the above

Any of the above may be done individually, in groups, or some combination.

# Motivation

Why would you want to flip your classroom?

- ▶ Increase student engagement
- ▶ Students practice skills when the instructor is around to help
- ▶ Concentrate on higher-order thinking and metacognitive skills
- ▶ Allow for more personal interaction and more individualized instruction
- ▶ Emphasis on teamwork as a “soft skill”
- ▶ Dissatisfaction with lecture (see Gibbs)
- ▶ Some combination of the above

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## Tip #1

Find your own way.

- ▶ “Flipping the Classroom” covers a wide variety of practices, and is done for a wide variety of reasons.
- ▶ You have to figure out what works for you and your students at your institution in your discipline.
- ▶ There is lots of material out there. (See bibliography.) Study your options and make an informed decision.



## Tip #2

It's not about the videos.

- ▶ “I want to be a YouTube star,” is a poor reason to flip.
- ▶ Start with what you want to do in class with the time you can free up by not lecturing.
- ▶ If you don't have good idea of what that is, don't flip.
- ▶ Counterpoint: My colleague John Peterson from the UW-Platteville Biology Department started from the premise that lecture was a waste of time. He stopped lecturing “cold turkey” and then had to hunt every day for something else to fill his class time.

## Tip #2

It's not about the videos.

- ▶ From a study by Naccarato and Karakok: “The flipped classroom is not really a teaching technique. It's a course design platform. . . So, I tend to think of the flipped classroom as like an operating system, and IBL [Inquiry Based Learning] as like an app that runs on that operating system.”

## Tip #3

Team up.

- ▶ When I flipped my first class, I worked closely with my colleague James Swenson.
- ▶ We had both taught Discrete Math a number of times, and both were dissatisfied with the performance of our students.
- ▶ It was great to have the moral support and encouragement.
- ▶ Moreover, the process of working closely with James on a full semester's worth of material was one of the best experiences of my teaching career.
- ▶ "Flipping the classroom together forced both of us to engage with our own ideas about discrete mathematics at every level." (Swenson)

## Tip #4

Be prepared to work hard.

- ▶ If you think that flipping the classroom is going to free up a lot of time so you can work on your research (or your golf game), think again.
- ▶ You have to prepare the videos/reading guides/activities that make up the “shifting content” part of the course. That’s probably more work than just writing lecture notes.
- ▶ Although some of that work will be amortized over several semesters, there will also necessarily be maintenance.

## Tip #4

Be prepared to work hard.

- ▶ You also need to prepare the in-class activities, and keep them fresh.
- ▶ Monitoring and helping multiple groups of students working at their own pace in class takes an entirely different level of energy than lecturing.
- ▶ Your grading time will likely increase.

## Tip #5

Sell the change to the class.

- ▶ From an evaluation in my first semester of flipping: “...In my eyes it’s unfortunate to see a university that prides itself in being able to give its students in-class time with professors doing exactly the opposite.”
- ▶ Make sure that the student are aware of your motivation for flipping the class, and make sure that they understand how you think it will improve their learning.
- ▶ It wouldn’t hurt to let them know about Tip #4.

## Tip #6

Some students won't buy.

- ▶ No matter what, some people resist the unfamiliar.
- ▶ The flipped classroom demands more from the students. Some see that as a downside.
- ▶ Some students are going to complain no matter what, but a new pedagogy gives them something to focus on.
- ▶ Be sure that you have the support of your department, chair, dean, etc.

## Tip #7

Collect data.

- ▶ There are a lot of people flipping classrooms, and there is not yet firm evidence that it increases student understanding. (See Naccarato and Karakok.)
- ▶ Decide what your goals are, figure out how you might measure success, and measure it.



## Grades

	Standard (8 sec)	Flipped (7 sec)
A	18	25
B	39	51
C	53	56
D	30	19
F	33	35
W	25	9
Total	198	195

D/F/W rate: Standard class, 44%; Flipped class, 32%

## Attendance

Missed classes	Standard (4 sec)	Flipped (4 sec)
None	30 (34%)	51 (51%)
1%-10%	29 (33%)	36 (36%)
11%-20%	12 (13%)	7 (7%)
21%-30%	8 (9%)	3 (3%)
> 30%	10 (11%)	2 (2%)
Total	89	99

# Homework

Missed HW	Standard (4 sec)	Flipped (4 sec)
None	35 (39%)	50 (51%)
1%-10%	29 (33%)	26 (24%)
11%-20%	11 (12%)	4 (4%)
21%-30%	2 (2%)	7 (7%)
> 30%	12 (13%)	12 (12%)
Total	89	99

## Tip #8

There is no magic bullet.

- ▶ My data seem to indicate improvement in several key areas, but students still fail.
- ▶ If someone has invented a pedagogy where every student is successful in every class, I haven't heard about it.
- ▶ It's likely that there are students who would do better with standard lecture. (It's certain there are students who think that they would do better with standard lecture.) I don't know how to identify those students or what to do to help them.

## Tip #9

Adjust.

- ▶ No class is ever perfect, and your first flipped class will be far from it.
- ▶ Use the data from Tip #7 to decide how you can make changes.
- ▶ Compare to your colleagues' experience. (See Tip #3.)
- ▶ Adjustment is going to require more work. (See Tip #4.)

## Tip #10

Have fun.

## Summary

1. Find your own way.
2. Its not about the videos.
3. Team up.
4. Be prepared to work hard.
5. Sell the change to the class.
6. Some students won't buy.
7. Collect data.
8. There is no magic bullet.
9. Adjust.
10. Have fun.

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- ▶ James Swenson, Mathematics, UW-Platteville

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# Questions?

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