<https://www.washington.edu/teaching/topics/engaging-students-in-learning/flipping-the-classroom/>

**Flipping the classroom**



**What is “flipping”?**

Flipping the classroom is a “[pedagogy-first](https://blog.peerinstruction.net/2012/04/20/how-do-i-get-my-students-to-prepare-before-coming-to-a-flipped-class/)” approach to teaching. In this approach in-class time is “re-purposed” for inquiry, application, and assessment in order to better meet the needs of individual learners. Students gain control of the learning process through studying course material outside of class, using readings, [pre-recorded video lectures](https://www.youtube.com/watch?v=Kx8vcKgnR0o&feature=player_embedded) (using technology such as [Panopto](http://panopto.uw.edu/)), or research assignments. During class time, instructors facilitate the learning process by helping students work through course material individually and in groups.

There are numerous ways to flip your class. In fact “every teacher who has chosen to flip does so differently,” says Bergmann and Sams (2012). Below are resources on how to get started and strategies and examples to help you determine what kind of flip is best for your courses.

**Before you ‘flip’: What you need to know**

Also known as “inverting” a classroom, this approach seeks to preserve the value of lecture (expertise and custom delivery), while freeing up precious in-person class time for [active learning strategies](http://www.washington.edu/teaching/teaching-resources/engaging-students-in-learning/promoting-student-engagement-through-active-learning/). The main goal in flipping a class is to cultivate deeper, richer learning experiences for students when the instructor is present to coach and guide them.  Emphasis is on higher-order thinking skills and application to complex problems.

Common activities include:

* [Collaborative learning](https://teaching.cornell.edu/teaching-resources/engaging-students/collaborative-learning)
* [Case-based learning](http://www.crlt.umich.edu/tstrategies/tscbt)
* [Peer instruction](https://blog.peerinstruction.net/2013/01/15/quick-start-guide-to-flipping-your-classroom-with-peer-instruction/)
* [Problem sets](https://teachingcommons.stanford.edu/resources/teaching/evaluating-students/creating-assignments/designing-problem-sets)

**Quick start guides**

* [The Inverted Classroom](http://scholarworks.gvsu.edu/cgi/viewcontent.cgi?article=1183&context=colleagues), by Robert Talbert, Education Reform, May 2012
* Inverted Classroom By Robert Talbert, GVSU Faculty FEATURE The typical university classroom allocates time in a way that is familiar to everybody: Students gather at the class meetings to hear a lecture from the professor and to take notes, and then students work on homework, projects, and other activities outside of class. The traditional classroom is so familiar, in fact, that it can be difficult to conceive of classes being run any other way—and difficult to think of why anyone would ever want to. But there is reason to believe that this time-honored setup is not best for student learning. The most difficult tasks students have to perform generally appear on the work they do outside of class, on their own and separated from the instructor’s help. Conversely, the instructor’s availability is at its maximum in class, but this is when the cognitive tasks for students are at their lowest level and when students need the least help. It would almost seem that a reversal of the traditional setup would be an improvement: Have students acquire basic information through lectures, reading, and other sources outside of class, and put them to work on challenging, high-level cognitive tasks during class. That reversal is at the heart of what is known as the inverted classroom. In the inverted classroom, lecture and homework switch places, with lectures taking place outside of class through prerecorded video and class time, in its place, being spent on active work. With lectures being consumed outside of class, students can pause to reflect on what is being said, rewind to hear it again, listen to as much or as little of the lecture as their schedules permit, and view the lecture on a mobile device rather than in a fixed location. And in class, students can focus on internalizing the material with the direct help of their peers and their instructor. Since instructors do not present a one-size-fits-all lecture to an entire class, instruction can be personalized to each student, and the instructor can take the role of a “guide on the side” role rather than a “sage on the stage”. The end result can be a classroom that is more inclusive, more active, and more learner-centered than the traditional classroom.
* [How to Flip a Class](https://facultyinnovate.utexas.edu/teaching/strategies/flipping/how), Faculty Innovation Center, UT Austin
* **Flipped Classroom**

A flipped class ([**view**](https://facultyinnovate.utexas.edu/sites/default/files/flippedgraphic%28web960px%29.png)image) is one that inverts the typical cycle of content acquisition and application so that:

* students gain necessary knowledge before class, and
* instructors guide students to actively and interactively clarify and apply that knowledge during class.

Like the best classes have always done, this approach supports instructors playing their most important role of guiding their students to deeper thinking and higher levels of application. A flipped class keeps student learning at the center of teaching.

### Why are instructors flipping their class?

**Students learn more deeply.**

As a result of students taking responsibility, interacting meaningfully and often with their instructor and peers, and getting and giving frequent feedback, they acquire a deeper understanding of the content and how to use it.

**Students are more active participants in learning.**

The student role shifts from passive recipient to active constructor of knowledge, giving them opportunities to practice using the intellectual tools of the discipline.

**Interaction increases and students learn from one another.**

Students work together applying course concepts with guidance from the instructor.  This increased interaction helps to create a learning community that encourages them to build knowledge together inside and outside the classroom.

**Instructors and students get more feedback.**

With more opportunities for students to apply their knowledge and therefore demonstrate their ability to use it, gaps in their understanding become visible to both themselves and the instructor.

### How do I flip my class?

This guide is designed to walk you through the steps of flipping a single class; the process is scalable for flipping portions of each unit or an entire course. One of the major factors in course redesign is the time it takes to do it well. We recommend pilot testing the the flipped model with a single class before engaging in a complete redesign. [**Learn More**](https://facultyinnovate.utexas.edu/how-to-flip)

The featured videos about the flipped classroom may also be viewed and downloaded as a set [on iTunesU](http://itunes.apple.com/us/itunes-u/the-flipped-classroom/id650759830?mt=10) (iTunes or iTunesU app on IOS required

* [5 Things I wish I knew about the flipped classroom](https://www.youtube.com/watch?v=4JPdGlyt6gg), John Sowash (April 2012)
* [Looking for “Flippable” Moments in Your Class](https://www.facultyfocus.com/articles/instructional-design/looking-for-flippable-moments-in-your-class/), Barbi Honeycutt, Faculty Focus (March 2013)
* [Things you should know about Flipped Classrooms](https://library.educause.edu/resources/2012/2/7-things-you-should-know-about-flipped-classrooms) by Educause, Feb 2012
* [6 Expert Tips for Flipping the Classroom](https://campustechnology.com/articles/2013/01/23/6-expert-tips-for-flipping-the-classroom.aspx) Campus Technology (Jan 2013)

**Flipping practices: Strategies for engaging students**

**On flipping with group-based and peer instruction:**

* [Turn to Your Neighbor](https://blog.peerinstruction.net/) is a blog by Julie Schell on peer instruction in teaching. It includes multiple articles on flipping the classroom with peer instruction. See especially: [Quick Start Guide to Flipping Your Classroom with Peer Instruction](https://blog.peerinstruction.net/2013/01/15/quick-start-guide-to-flipping-your-classroom-with-peer-instruction/)
* [Team-based Learning Collaborative](http://www.teambasedlearning.org/) offers advice on how to structure groups and tasks, and scale it up to large classroom.
* [This New Tool Makes the Flipped Classroom More Social](https://www.eschoolnews.com/2016/07/21/this-new-tool-makes-the-flipped-classroom-more-social/), Dennis Pierce (July 2016 ), discusses Perusall, a social learning platform to enhance the flipped classroom.

**Examples of flipped classrooms:**

* [How and Why I Flipped My Classroom](https://www.slideshare.net/brocansky/how-i-flipped-my-classroom), Michelle Pacansky-Brock (2009), a PowerPoint presentation of a flipped art history course in a community college.
* [Leaving lectures behind](https://news.ncsu.edu/2011/09/leaving-lectures-behind/), Jimmy Ryals (September 2011), on a flipped Physics classroom using the SCALE-UP model at North Carolina State University.

**More in-depth discussions of flipping practices:**

Top of Form

Search

Bottom of Form

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* How do You Flip a Class?
* <https://facultyinnovate.utexas.edu/how-to-flip>

**How do You Flip a Class?**

This guide is designed to walk you through the steps of flipping a single class; the process is scalable for flipping portions of each unit or an entire course. One of the major factors in course redesign is the time it takes to do it well. We recommend pilot testing the the flipped model with a single class before engaging in a complete redesign.

**Step 1: Identify where the flipped classroom model makes the most sense for your course**

The following questions may help you identify a good place to start, whether you have designed your course around learning outcomes or by units:

* In which class sessions do you currently have an in-class activity that you rarely have time to complete during class and requires the students to apply their knowledge and skills?
* What concepts or topics do students struggle the most to understand, based on exam scores and/or assignment grades?
* On what topics would students benefit from the opportunity to apply concepts under your expert guidance in the classroom?

UT instructors share how they adapted to the new roles they play within the classroom and helped students  adjust to their new roles within the flipped class.

**Step 2: Spend class time engaging students in application activities with feedback**

The crux of the issue is figuring out for your class how class time could be repurposed in ways that provide students with an appropriate level of challenge while leveraging your expertise as a coach or guide. There are many possibilities for infusing a class with collaborative learning experiences. Utlimately, it comes down to finding an approach that works best for your students and your course content. [**Learn More**](https://facultyinnovate.utexas.edu/how-flip-class-time)

UT instructors share how they developed in-class engagement structures that leverages the power of the flipped class.

**Step 3: Clarify connections between inside and outside of class learning**

The point of the Flipped Learning model is to move the application-oriented "homework" into the classroom and to move the "lecture" to before class. Here are a few questions to get you started in this process:

* What do I want my students to know and be able to do as result of completing this sequence of the course? How does it fit into the bigger picture of the unit and course?
* What part of the current "homework assignment" could be moved inside of class to help students practice applying the content? What in-class learning activity is being rushed because there is currently not enough time to do it well?
* What practice do students need inside of class to prepare them for the larger assignment that will be completed after class? Will students make the connection between what is happening inside of class and the assignment they are working on after class?
* What content do students need to know before class to successfully engage in the learning activity during class?

The after-class portion may consist of a wide variety of activities including completing the work started in class or reading deeper about the topic or working together on a larger assignment that extends several class periods or practicing on one's own.  Keep in mind that the after-class portion from the last class occurs at the same time as the before-class portion of the next class, so helping students manage the workload is important.

UT instructors share how their course learning outcomes helped them make connections between in-class and out-of-class engagement.

**Step 4: Adapt your materials for students to acquire course content in preparation of class**

The dynamic and active environment that is created within the flipped classroom, means that it is essential for students to come prepared for class. Once you have a clear idea of how students will be asked to apply their knowledge and skills during class, begin considering what students will need to read or view in advance. While online video content is associated with the Flipped classroom model, one can flip a class by repurposing traditional materials. Some common ways students prepare for class incude:

* Reading materials (e.g., textbook chapters or relevant articles)
* Online video and audio content (e.g., podcasts, videos, online micro-lectures, simulations, or demonstrations)

Keep it simple at first by either relying on your current resources or using existing online content rather than creating your own. If you have time, explore what content currently exists online that may help you supplement your resources. Whatever path you take, make sure that you:

* Hold students accountable for completing the pre-class assignment, and
* Provide students a way to pose questions about the content they are learning outside of class.

[**Learn More**](https://facultyinnovate.utexas.edu/teaching-technology)

UT instructors explain how they developed structures for students to engage in course content before class by either creating their own materials or curating what already exists and placing it online.

**Step 5: Extend learning beyond class through individual and collaborative practice**

How will the content and skills learned before and during this class prepare students for extending their learning after class (e.g. finishing the problem set,  starting work on a project or a portion of an assignment, building upon what was begun in class to delve deeper into the topic, practicing alone or collaborating with peers, etc.)?

Students gain experience applying course content during class time, but they may also need additional practice after class. Extending what happens inside the class to outside the class is a crucial step for students to gain mastery and meet the learning outcome. Some ideas for deepening student understanding include:

* Use discussion boards or academic social media to elaborate on ideas developed inside class.
* Present additional problems (on Canvas, course website, or from the textbook) for students to gain further practice on their own outside of class. Online assessment systems can be used to provide immediate feedback to students.
* Create assignments that require students to take the skills and knowledge developed in class and apply it in a new way or to a new situation not covered in class.
* Assign additional readings that further expands upon the concepts discussed in class.
* Encouarage students to create informal learning groups.
* Develop a peer-led undergraduate study where students come together once a week to work additional problems that expand upon the concepts being learned in class.

**Contact us** to request a consultation about how to flip your class to bring more active engagement and collaboration into your classroom.

**Additional Resources**

 [**Flip Quick-start guide**](https://facultyinnovate.utexas.edu/sites/default/files/utflipquickstartguide120516-2.pdf)

Whether you want to flip one class session or an entire course, the following questions will help guide you through the essentials.



[**Snapshot of a Flipped Class**](https://facultyinnovate.utexas.edu/sites/default/files/Flipflow-small.png)

This infographic shows a typical sequence of learning opportunities before, during, and after a flipped class.



[**Pre-Flip vs. Post-Flip**](https://facultyinnovate.utexas.edu/sites/default/files/smallflippedwhatgraphic.png)

This table shows the differences in the student experience of a traditional and flipped class.

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* Bergmann, J., & Sams, A. (2012). Flip your classroom: [Reach every student in every class every day](http://uwashington.worldcat.org/title/flip-your-classroom-reach-every-student-in-every-class-every-day/oclc/761856913). Eugene, OR: International Society for Technology in Education
* Makice, K. (2012 April 13), [Flipping the Classroom requires more than video](https://www.wired.com/2012/04/flipping-the-classroom/). *Wired Magazine.*
	+ [**Engaging students in learning**](https://www.washington.edu/teaching/topics/engaging-students-in-learning/)
		- [Active learning](https://www.washington.edu/teaching/topics/engaging-students-in-learning/promoting-student-engagement-through-active-learning/)
		- **Flipping the classroom**
		- [Discussion](https://www.washington.edu/teaching/topics/engaging-students-in-learning/leading-dynamic-discussions/)
		- [Student writing](https://www.washington.edu/teaching/topics/engaging-students-in-learning/student-writing/)
		- [Teaching with technology](https://www.washington.edu/teaching/topics/engaging-students-in-learning/teaching-with-technology-2/)
		- [Large lecture instruction](https://www.washington.edu/teaching/topics/engaging-students-in-learning/large-lecture-instruction/)
		- [Office hours](https://www.washington.edu/teaching/topics/engaging-students-in-learning/face-to-face-office-hours/)
		- [Service learning](https://www.washington.edu/teaching/topics/engaging-students-in-learning/service-learning/)



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**GET INSPIRED TO FLIP**

[Mike Brown (EES) uses Camtasia to create engaging videos and 'flip' his classes](http://www.screencast.com/users/JMichaelBrown/folders/Videos/media/561b22a7-78b0-4900-84ed-eeef4b237f6c)
(18 min.)

[Scott Freeman, David Haak, and Mary Pat Wenderoth, "Increased Course Structure Improves Performance in Introductory
Biology"](http://www.lifescied.org/content/10/2/175.full) (CBE--Life Sciences Education 10 (2011) 175-186

**Selected resources:**

That reversal is at the heart of what is known as the inverted classroom. In the inverted classroom, lecture and homework switch places, with lectures taking place outside of class through prerecorded video and class time, in its place, being spent on active work. With lectures being consumed outside of class, students can pause to reflect on what is being said, rewind to hear it again, listen to as much or as little of the lecture as their schedules permit, and view the lecture on a mobile device rather than in a fixed location. And in class, students can focus on internalizing the material with the direct help of their peers and their instructor. Since instructors do not present a one-size-fits-all lecture to an entire class, instruction can be personalized to each student, and the instructor can take the role of a “guide on the side” role rather than a “sage on the stage”. The end result can be a classroom that is more inclusive, more active, and more learner-centered than the traditional classroom

<https://omerad.msu.edu/teaching/teaching-strategies/27-teaching/162-what-why-and-how-to-implement-a-flipped-classroom-model>

**Fitting with the revised Bloom’s Taxonomy**

In traditional learning, lower level of learning such as remembering and understanding is happening in class, while students are usually left to work on activities that involve higher level of learning outside of classroom. However, in the flipped classroom model, learning is flipped. As you can see from the pyramid, students can finish the lower level of cognitive work before class. And when they come to class, they can engage in higher cognitive levels of learning with peers and teacher present.



[Back to Top](https://omerad.msu.edu/teaching/teaching-strategies/27-teaching/162-what-why-and-how-to-implement-a-flipped-classroom-model#top)

WHY YOU SHOULD FLIP YOUR CLASSROOM?

The concept of flipped classroom was first brought up by Jonathan Bergmann and Aaron Sams, who were both high school chemistry teachers. In their book: *Flip your classroom: Reach every student in every class every day* (2012), they discussed a couple of reasons why teachers should consider flipping (p.20-33):

* Flipping speaks the language of today’s students.
* Flipping helps busy students.
* Flipping helps struggling students.
* Flipping helps students of all abilities to excel.
* Flipping allows students to pause and rewind their teacher.
* Flipping increases student-teacher interaction.
* Flipping allows teachers to know their students better.
* Flipping increases student-student interaction.
* Flipping allows for real differentiation.
* Flipping changes classroom management.
* Flipping changes the way we talk to parents.
* Flipping educate parents.
* Flipping makes your class transparent.
* Flipping is a great technique for absent teachers.
* Flipping can lead to the flipped mastery program.

HOW TO IMPLEMENT A FLIPPED CLASSROOM?

Jeff Dunn (2014) has wrote a short piece on “The 6-step guide to flipping your classroom”, which presented 6 easy steps for implementing flipped classroom.

1. Plan

Figure out which lesson in particular you want to flip. Outline the key learning outcomes and a lesson plan.

1. Record

Instead of teaching this lesson in-person, make a video. A screencast works. Make sure it contains all the key elements you’d mention in the classroom.

In Bergmann and Sams’ book (2012), they also pointed out that do not make a video just for the sake of making a video. Only do so when you feel these are appropriate and necessary. It all depends on the educational goal of your lesson. If making videos better facilitate your instructional goal, then go ahead.

1. Share

Send the video to your students. Make it engaging and clear. Explain that the video’s content will be fully discussed in class.

1. Change

Now that your students have viewed your lesson, they’re prepared to actually go more in-depth than ever before.

1. Group

An effective way to discuss the topic is to separate into groups where students are given a task to perform. Write a poem, a play, make a video, etc.

1. Regroup

Get the class back together to share the individual group’s work with everyone. Ask questions, dive deeper than ever before.

After the six steps, Review, Revise, and Repeat!

Some other strategies that can be used in in-class activities include:

* Active learning. Allow students to apply concepts in class where they can ask peers or instructors for feedback and clarification.
* Peer instruction. Students can teach each other by explaining concepts or working on small problems.
* Collaborative learning. Collaborative learning activities could increase student engagement, enhance student understanding, and promote collective intelligence.
* Problem-based learning. Class time can be spent working on problems that can last for the duration of a semester.
* Discussions or debate. Give students the opportunity to articulate their thoughts on the spot and to develop their arguments in support of their opinions or claims.