Teaching Tips:
Flipped Classroom Learning

By Dr. Toni DiMella, Director of Transformative and Inclusive Pedagogy, USC Upstate, 2020

About Flipped Learning

Blended learning is the "thoughtful integration of classroom face-to-face learning experiences with online learning experiences" through the use of Web-based and classroom coursework (Garrison & Kanuka, 2004, p. 96). While there are a variety of blended learning models, the flipped classroom is among the most common, particularly in higher ed. In a flipped classroom, the primary delivery of content and instruction is completed online, prior to a scheduled class session, and practice applying that content is completed during the class session. Besides being a creative scheduling solution, it allows for multiple methods of learning, increases metacognition, and embeds the many evidence-based teaching strategies, such as retrieval practice, spacing, interleaving, and use of feedback (Agarwal & Bain, 2019).

Evidence-Based Teaching

While the number of strategies vary from Web site to Web site, evidence-based teaching strategies (EBTS) have been shown to increase student success and have become widely accepted as "best practices." Four of these strategies, retrieval practice, spacing, interleaving, and meaningful feedback, are sometimes referred to as power tools.

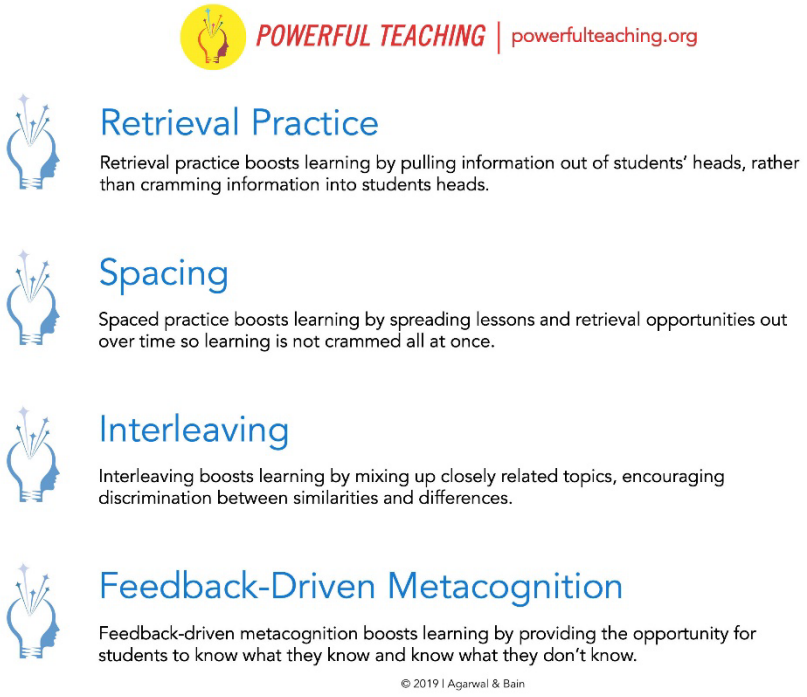

Figure 1 Power Tools

Retrieval practice helps students encode and store information. By having students "pull out" information, instead of being provided with it, to generate solutions, they improve their organization and transfer of knowledge (Agarwal & Bain, 2019). Spacing this practice over a long period of time not only helps students retain information but increases their ability to make connections across the curriculum, referred to as interleaving. Repeated,

spaced practice and interleaving not only increases success, but also increases a student's metacognition (Eddy et al, 2015).

EBTS does have critics. The positivist nature of evidence-based education has raised concerns from various experts on policy and pedagogy. Focusing on EBTS as individual tools can create an educational environment that is overly technical and intervention-based, creating an "ends justify the means" approach to increasing student success (Biesta, 2007; Lees, 2007). This can feel like an automated adaptive learning package from a publisher without any input from an instructor.

A way to prevent this from occurring while still implementing "power tools" is by incorporating active learning. Use of active learning creates repeated, spaced practice of the content while requiring students to use higher-order thinking skills, both increasing engagement and the opportunity for interleaving. Creating opportunities for students to interact with each other and the content also provides students with valuable feedback from both their peers and the teacher on their level of understanding and mastery. The feedback helps students to better develop their ideas and make stronger connections between the material leading to a deeper understanding of the content and aides in developing a student's metacognition as they must alternate between retrieving, explaining, and re-evaluating information (Agarwal & Bain, 2019). Active learning also increases student accountability, as they must come prepared to contribute to the learning process and defend and/or explain their responses (Eddy et al., 2015).

Phases of Flipping

The coupling of EBTS with active learning activities offers a research-supported approach to improving student outcomes and increasing engagement. Use of a flipped classroom creates time and space in the course schedule to utilize these strategies. However, a flipped classroom does not automatically mean flipped learning will take place; 'flipping' refers to more than assigning readings or watching a supplemental video before attending class. An effective flipped classroom has three key phases (see Figure 2).

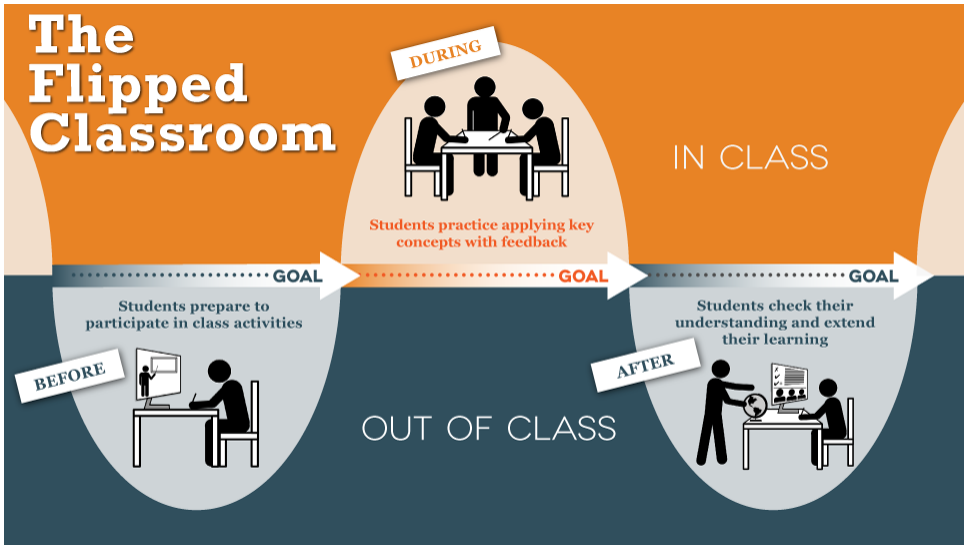

Figure 2 The Flipped Classroom

For help implementing any course design best practices in your classes, contact academicinnovation@uscupstate.edu.

Phase One: Before Scheduled Meeting

The first phase is the one that is most often attributed to flipped learning. This is the step where the traditional lecture is replaced with an online learning component, completed outside of the classroom. By placing the introduction of the material online, allowing students to access it asynchronously, students have the flexibility to not only choose when and where they interact with the content, but also have the option to 'chunk' their learning, lowering their cognitive load, and the ability to revisit the material as needed (Munyofu et al., 2007). While videos are an important component of this phase, they are not the only ones. In order for the phase one materials to be effective, they cannot be passive. Use of formative assessments, either embedded within or required after a video, is a low-stakes method of engaging students and holding them accountable for their own learning. A formative assessment (FA) can be in quiz form, but also could be a discussion forum or minute paper that require students to interact with each other (Wees, 2012). Besides being a means of ensuring students review the required materials, FAs also serve as a way for the professor to collect important data about the students and their level of understanding of both the current material and prior knowledge. This data is a key element of phase two.

Phase Two: During Scheduled Session

In the second phase, the students return to the classroom. An online synchronous meeting via Blackboard Collaborate can replace a face-to-face (f2f) meeting in the event an in-person session is not possible. It is in the second phase that we commonly see two strategies used: active learning and feedback-informed instruction. Both strategies can easily be adapted for an online, synchronous session. Feedback-informed instruction, also referred to as Just in Time Teaching (JiTT), is often a mini-lecture or review of the phase one material students appeared to struggle with given the FA data. However, it can be more interactive than a simple review session and implement active learning strategies. Common strategies are group quizzes, polls, web quests, and 'muddiest point' discussions; many of the FA tools can easily be used in-class or in virtual meeting with small or large groups.

Depending on the length of your online synchronous session or f2f class, JiTT can be the central activity or used as a pre-activity for a larger one. Many professors choose to use a short mini-lesson for JiTT to address gaps and to help 'set the stage' for a more robust, collaborative activity that often requires students to both apply the material from the pre-class work and extends the discussion of the content outside the classroom. Regardless of how you meet with your students (online or f2f), it is imperative that phase two implement active learning strategies for blended learning to be effective. Even when not used in conjunction with a flipped classroom, active learning has shown to raise student achievement and lower DFW rates. Fortunately, Blackboard Collaborate has a variety of collaborative tools available to both the instructor and to the students.

The activity in phase two is most often concluded during that session but can extend past the allotted class time and require students to collaborate during their own time, on or offline. Despite when the activity is completed, it must be assessed. Many professors choose to assess students as a group, some require both group and individual submissions and other elect to assess each student individually. Group submissions are ideal in that they require students to collaborate, compelling them to share and negotiate knowledge, and it reduces the number activities that need to be graded.

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Reducing the grading load allows the professor to provide more meaningful, detailed feedback for students. This feedback serves as the basis for phase three.

Phase Three: After the Scheduled Session

In the last phase, students should review, reflect, and act upon the feedback. By reviewing and reflecting on the feedback, students boost their metacognition and also increase their knowledge of the content by highlighting gaps in their understanding (Agarwal & Bain, 2019). Requiring students to act upon the feedback serves several purposes. First, it can further extend their learning. This is particularly important if that was not incorporated in phase two. By interleaving course content with other courses and the real world, you help to make connections and identify differences, increasing your critical eye. Next, the reflection activity acts as a spaced practice session. Spacing practice helps to strengthen retrieval skills and 'refresh' knowledge. Last, the data collected in the third phase will help the professor assess student growth since phases one and two. This allows the professor not only to adjust their own practice but also to highlight what content needs to be interleaved into future activities and JiTTs.

Getting Started with the FLIPR Model

On its quick-start guide, The University of Texas at Austin (2019) suggests faculty use the FLIP method:

- Focus on content students struggle with. You'll want to make sure students review this content before attending the f2f or synchronous sessions. During the schedule meeting, be sure to review the content and embed it into an activity.
- Look for active learning activities that will require students to apply the content the reviewed before class, extend their level of understanding of that content, and expect them to make connections to other content areas and the real world.
- Identify the content students will need to in order prepare for the active learning activity. Be sure to hold student accountable for learning this material before attending the scheduled session by use FAs and other online tools.
- Prepare students for the type of activity they will be doing. Students should arrive to class with an understanding of what they will need to do and how they will be assessed.

We suggest one additional step to this model:

- Require reflection. Reflection is a critical component to the learning process, increasing both understanding of the content and the student's metacognition (Agarwal & Bain, 2019).

By following the FLIPR model, students will engage in meaningful learning experiences that allow them flexibility in acquiring content knowledge, the opportunity to apply that knowledge to real world scenarios, and time to reflect upon what they have learned and the overall learning process.

For More Information

USC Upstate has a variety of tools and resources available to help you begin flipping your class! Contact the Center for Academic Innovation and Faculty Support by calling 864-503-5850 or emailing academicinnovation@uscupstate.edu.

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Figure 1. Powerful Teaching. Retrieved from *Resources and Downloads*, https://www.powerfulteaching.org/resources. Copyright [2019] by Powerful Teaching.

Figure 2. The Flipped Classroom. Retrieved from *Flipped Classroom*, by the University of Texas at Austin Faculty Innovation Center , 2020, https://facultyinnovate.utexas.edu/sites/default/files/flippedgraphic(web960px).png. Copyright [2020] by the University of Texas at Austin.

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