Flipping the higher education classroom: the why, what and how

Why? Enhance the effectiveness of instruction by reducing ‘sage on the stage’ activities in the classroom. This is also known as ‘flipped teaching’ and ‘inverted classroom’ (Frederickson, Reed, & Clifford, 2005; Bergman, 2011). Inverting the traditional model (of lecture followed by homework) works because it:

- is engaging (Young, 2009),
- lowers stress (Marlowe, 2012),
- reduces in-class cognitive load (Seery, & Donnelly, 2012),
- increases student cooperation, innovation and task orientation (Strayer, 2012),
- produces more aware learners (metacognition) (Frederickson, Reed, & Clifford, 2005), and it
- addresses mismatch in instructor’s teaching and students’ learning styles (Lage, Platt, & Treglia, 2000)

What? Berrett (2012) summarizes this concept aptly:

“It may not have the gee-whiz factor of high-tech innovation, but changing expectations for what happens in class may prove to be a bigger advance in teaching. … As its name suggests, flipping describes the inversion of expectations in the traditional college lecture. It takes many forms, including interactive engagement, just-in-time teaching (in which students respond to Web-based questions before class, and the professor uses this feedback to inform his or her teaching), and peer instruction. The immediacy of teaching in this way enables students’ misconceptions to be corrected well before they emerge on a midterm or final exam.”

Flipping the classroom is not about technology, although moving some elements of delivery to outside the classroom can be facilitated by certain software tools. Flipping the classroom is not about online or blended learning, although the same course management system could be used as a host for flipped materials, such as recorded lectures or demonstrations. The flipped classroom substitutes traditional in-classroom activities such as instructor lectures and presentations and replaces those activities with assignments, group discussions, and collaborative problem solving. Given well-designed pre-class learning activities, the classroom now becomes more about mastery of material through hands-on learning in the form of student-to-student and student-to-instructor interaction. A flipped classroom is not necessarily an active learning classroom, but often in-class activities are applied as appropriate using active learning techniques (Paulson, & Faust, 2010).

How? There is a spectrum of options with varying levels of inversion and range of technology solutions that may be adopted. The FLIP Spectrum© provided on reverse describes the array of flipping options available to the innovative educator. Challenge your notions of what belongs in the classroom. Go ahead and re-design your delivery. Chances are you, and your students, will like what you build.

References


The FLIP Spectrum®

Varying the degree of inversion and the use of technologies to deliver an effective flipped classroom

**HT-LI** Inversion: Reduce instructor-delivered activities in the class, such as lecturing or demonstrating, by delivering selected components to students prior to class using advanced delivery tools and software. Replace some class time with active teaching methods, such as mastering of assignments, group discussions, and collaborative problem solving. In this quadrant, the instructor may aid student learning by giving brief lectures or demos covering concepts best delivered in class.

**Technologies**: Advanced tools to deliver content in a more media-rich format. Some may require IT support. E.g. Video produced with Adobe® Connect™, Camtasia®, Doceri®, PC camera tools, and presentations with SMART Board® or multimedia PowerPoint® decks.

**LT-LI** Inversion: Reduce instructor-delivered activities in the class by delivering selected components to students prior to class using very little or no technology. Examples could include emailing instructor summary notes to students prior to class. Replace class time with mastering of assignments, group discussions, and collaborative problem-solving or other active teaching methods. In this quadrant, instructor may implement limited inversion by giving shorter, focused lectures or selected demonstrations. This is a good quadrant to begin experimenting with the flip concept.

**Technologies**: Given low inversion and a more traditional classroom in this quadrant, the level of technology use may involve instructor-led presentation software, or no technology at all.

**HT-HI** Inversion: Minimize instructor-delivered activities in the class, such as lecturing or demonstrating, by delivering all components to students prior to class using advanced delivery tools and software. Replace class time with mastering of assignments, group discussions, and collaborative problem-solving or other active teaching methods. In this quadrant, students are active participants in their learning, engaged in the material, grappling with the content, challenged, hands-on.

**Technologies**: Advanced tools as in HT-LI used for pre/during/post-class content. Due to the higher availability of student interaction time, technologies may also be used by students to produce and share content in class.

**LT-HI** Inversion: Minimize instructor-delivered activities in the class by delivering most of these components to students prior to class using a limited number of technology options. Class time is used predominantly for mastering assignments, group discussions, and collaborative problem-solving or other active teaching methods. In this quadrant, students are more active participants in their learning, engaged in the material, grappling with the content, challenged, hands-on. The low tech dimension implies building an active classroom mastery experience with low use of technology.

**Technologies**: Using existing videos from YouTube EDU, TED, Khan Academy, Hulu, and PowerPoint with audio. Assigning site visits to art or science museum exhibits. There is more student interactivity time with or without tech.

The FLIP Spectrum® provided describes the array of flipping options available to the innovative educator. Challenge your notions of what belongs in the classroom. Go ahead and re-design your delivery. Chances are you, and your students, will like what you build.

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