

Maximizing Student Outcomes in Flipped Classrooms

How Do You Ensure Student Buy-in?

Project NExT Joint Mathematics Meetings 2019 David Pengelley
(find these slides on my personal webpages)

Overview

- What makes content delivery effective?
- Can learning outside the classroom still be 'active'?
- How do you ensure student buy-in?

Active learning here in the workshop? (no preparation in advance)

- 1 Your experiences and ideas: group brainstorming and reporting
- 2 My experiences
- 3 Resources
- 4 Questions/discussion

My experiences for student buy-in (25 years)
(full details and resources on my webpages)

- Can't separate student buy-in from pedagogical design
- My definition of active learning: 'Reduce or eliminate lecture, and devote substantial classroom time to student involvement in work that receives immediate feedback from other students and from the instructor.'
- Explain briefly to students the scientific evidence about what helps learning, explain the connection to course pedagogy, explain the benefits: engaging, fun, rewarding, successful; repeat when necessary; creates buy-in
- How to avoid 'He doesn't teach!': Build student confidence, in you, the mathematics, the course, their success. Exude confidence yourself, appear and be prepared, offer yourself 100% in the classroom. Make clear that their work guides how you will lead.
- Motto: 'Never lecture on something students can read and respond to in writing'

Effective content delivery, active learning outside the classroom, buy-in
(full details and resources on my webpages)

My personal daily pedagogy as an example (no lecture): 'Tightly integrate before/during/after class work for both student buy-in and learning'

- A, *due beforehand*: Read, write questions, respond to my questions.
Grade for completion only
- B, *bring to class*: Prepare 'warmup problems'.
Grade for completion in advance only
- During class: Directly build all activity on both A and B, creates student buy-in
 - A: Lead discussion of the questions, brief: use what they wrote for buy-in
 - B: Compare/complete problems in groups: I facilitate, students present, connect before/during/after class work for buy-in
- C, *after class*: A very few harder 'final problems' building on B from class, creates buy-in. Mark carefully, may be asked to redo to perfect, holistic letter grade, no numerical points. Final level of achievement

- ABC a very large part of course grade, reduce exams; harmony between learning and evaluation, puts credit emphasis on the learning process itself; creates buy-in
- I-(We)-You → You-You-Y'all-We-You
Shift from I to You creates buy-in

Resources

- MAA Instructional Practices Guide, 2017
- Dana Ernst's 'Setting the Stage' blog post, on Day 1 activities
- My web pages at web.nmsu.edu/~davidp

Write to me!

(Guess what! Email address on my personal webpages)

Effective content delivery, active learning outside the classroom, buy-in

- My personal daily pedagogy (no lecture): 'Tightly integrate before/during/after class work for both student buy-in and learning'
 - Part A, *due well beforehand*: Read, write questions, and respond to my questions. I read these, make notes to prepare for class. Grade for completion only: +/√/-
 - Part B, *bring to class*: Prepare 'warmup problems'. Grade for completion in advance only: +/√/-
 - In class: Build directly on Parts A and B
 - A: Discuss questions based on my notes, brief
 - B: Compare/complete problems in groups (I circulate, facilitate), students present (I choose who*/what, I lead discussion). Incentives to prepare: peer and instructor pressure
 - Part C, *after class homework*: A very few higher level 'final problems', marked carefully, may be asked to redo to perfect, use qualitative grading rubric, single letter grade per assignment, no numerical points. Final level of achievement
- ABC a very large part of course grade; harmony between learning and evaluation, reduce exams
- I-(We)-You → You-You-Y'all-We-You