What are good ways to prepare students for active learning?

Put your answers on the flip charts. Comment on others' answers too (stars, +1, -1, check, x, etc.)



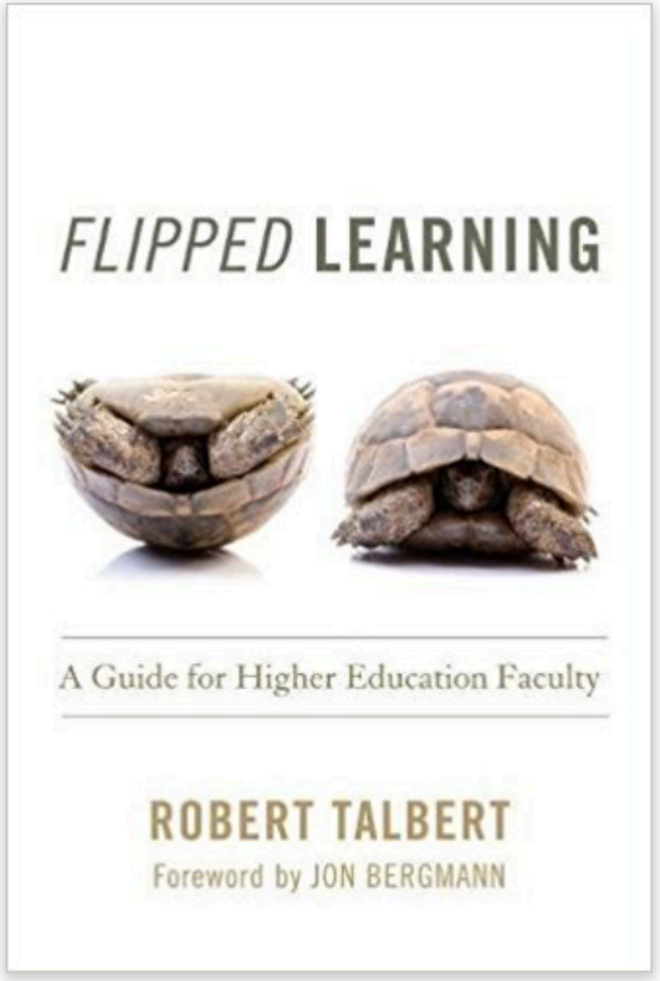
“DO THE FLIP!” USING ‘GUIDED PRACTICE’ FOR ACTIVE STUDENT ENGAGEMENT

RAVISHA MATHUR, SILVIA HEUBACH, VICTORIA BHAVSAR, LAURA SULLIVAN-GREEN
CALIFORNIA STATE UNIVERSITIES: SAN JOSE, POMONA, LOS ANGELES

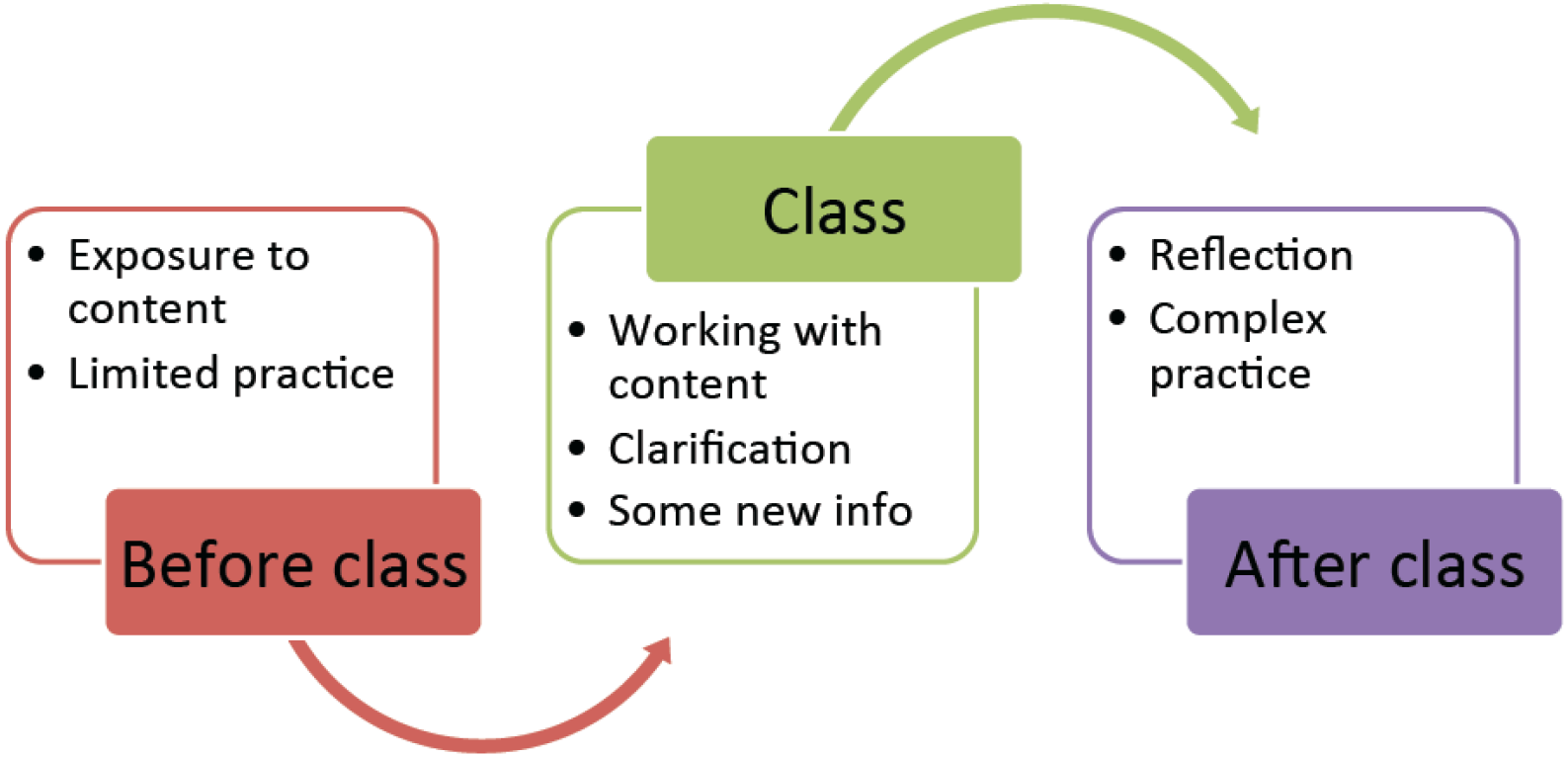
https://tinyurl.com/yytbadq7

TALBERT'S APPROACH

Robert Talbert (2017). *Flipped Learning: A Guide for Higher Education Faculty.*



COMPONENTS OF THE FLIPPED MODEL



OVERVIEW OF A FLIPPED LESSON PLAN

Pre-session work [individual space]

- guided practice
- graded for timeliness, completion (i.e., effort)
- informs planning for group space activity

In-session activity [group space]

- interactive group-worthy activity
- clearly relies on pre-session work

Post-session follow-on [individual/team space]

- guided “advanced” practice
- uses pre- and in-session activity
- provides feedback to students and to instructor



TODAY'S DELIVERABLES

Generate a partial draft of a pre-lesson guided practice

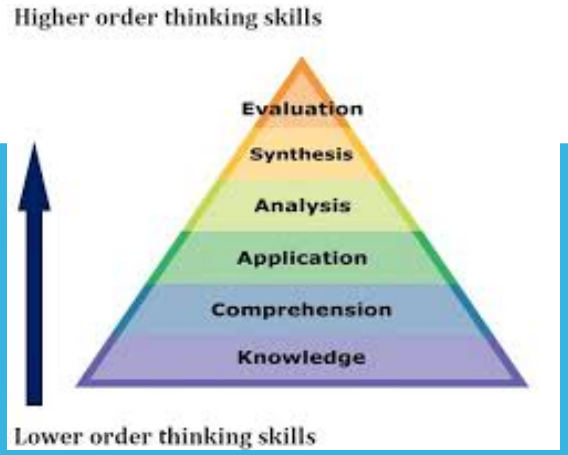
Generate a partial draft of a post-lesson advance guided practice

Decide on next actions to progress with your lesson plan



STEPS OF FLIPPED LESSON PLANNING

1. Create a list of learning outcomes (LOs) and designate them as basic or advanced based on cognitive complexity (Bloom's taxonomy).
2. Arrange the LOs into basic and advanced LOs.
3. Develop a plan of in-class activities linked to the advanced LOs. Map out the details.
4. Plan pre-class activity linked to the basic LOs; create a guided practice document.
5. Design and construct any post-class activities intended for students (reinforce basic and advanced LOs).



START WITH A TOPIC….

Write down ONE topic that you will teach right after this conference, in one to three class sessions.



STEP 1: DEVELOP LEARNING OUTCOMES

Write out learning outcomes for your topic:

- Unambiguous
- Action oriented
- Measurable
- Comprehensive
- Minimal

- Basic – outcomes that students can meet on their own. Linked to preparatory activities
- Advanced – outcomes that students need your support to meet. Linked to group (class) space and post-class activities



STEP 1: DEVELOP LEARNING OUTCOMES

Basic

Vague: Students will know the elements on the periodic table of elements.

Clear: Students will be able to identify the elements of the periodic table based on their symbols.

Advanced

Vague: Students will learn the programming language, Python.

Clear: Students will use Python to complete a data mining analysis.



STEP 1: DEVELOP LEARNING OUTCOMES

- Write 2-4 LOs for your topic. (7 minutes)
- Check with your neighbor for clarity and complexity. (5 minutes)
- Share out challenges in writing LOs. (2 minutes)

(Note that this is an extended think-pair-share)



STEP 2: SPLIT LOS INTO BASIC AND ADVANCED

Label your LOs as Basic and Advanced:

- Which ones can be learned individually?
- Which ones will students need help with?

You can think of basic as linked to pre-class activities and advanced as linked to in-class and post-class activities.



STEP 3: PLAN EFFECTIVE IN-CLASS ACTIVE LEARNING STRATEGIES

What's your favorite active learning activity?

- Strategies: https://tinyurl.com/yaneyqub
- Tools: https://tinyurl.com/y9kp9hhx



STEP 4: PRE-CLASS ACTIVITIES AND GUIDED PRACTICE DOCUMENT

Key components of the guided practice:

- Overview
- Learning outcomes
- Content acquisition activities
- Exercises/tasks to demonstrate learning outcomes and provide accountability



WHAT ABOUT CONTENT ACQUISITION ACTIVITIES?

Videos!

Make your own – try not to do this.

Select and curate other people's.

MAKE SURE THEY ARE CAPTIONED

Eight ways to get content besides watch videos

Simulations

Podcasts

Read – textbooks, trade mags, primary source

Simple experiment

Talk to someone



BUT WILL THEY DO THE WORK? YES, IF:

- Moderate
- Failure tolerant
- Organized
- Engaging
- Accountability included



WHAT ABOUT EXERCISES AND TASKS FOR PRACTICE AND ACCOUNTABILITY?

Online Quizzes

- Eight things to do besides online quizzes
- Submit a question
- Submit a summary
- Quiz in class based on notes
- Brain dump at beginning of class
- Put important info on whiteboard
- Mind-map
- Pre-class discussion board



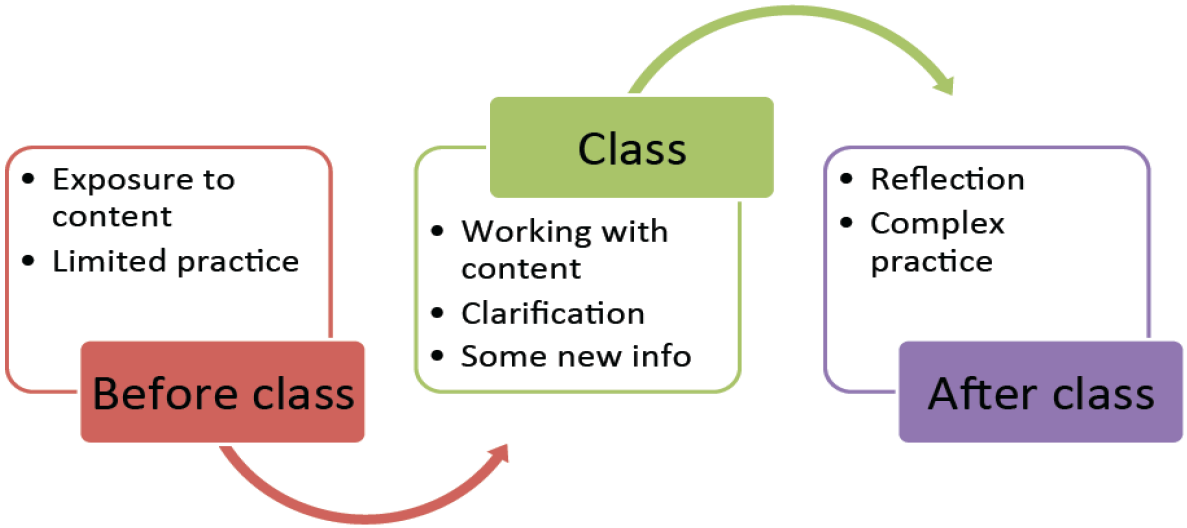
CAUTION: MODERATION IN PREP WORK

3 hours in class = 6 hours outside

Prep work ~1 hour per week.

Advanced work ~2-4 hour per week.

Leaves 1-3 hour for projects and studying.



STEP 5: "ADVANCED PRACTICE" POST-CLASS ACTIVITIES REINFORCE ADVANCED LO'S

Key components of advanced guided practice:

- Learning outcomes
- Advanced exercises to demonstrate LOs
- Reflection and integration (metacognition)

Contribute to the shared google doc:

What do you do currently after class to reinforce course content?

What additional reflective or integrative activities would reinforce student learning?



EIGHT THINGS TO DO BESIDES PROBLEM SETS

- Formal writeup of in-class work
- Post-class project
- More practice (good for quantitative courses)
- Post class discussion board
- Ideas for reflection assignments:
  - Identify methods of learning that worked well or not
  - Learning journal – motivation, affect, & behavior
  - Writing that helps connect ideas
  - Planning upcoming work – project milestones and future plans



POST-CLASS REFLECTIVE ACTIVITY

Design post-class activity that builds on in-class work and supports your advanced LOs.

- Think outside of the box– beyond just additional homework
- Your activity should include a reflective/integrative component



POST-CLASS REFLECTIVE ACTIVITY

Share with a partner. Provide some feedback of the post-class activity. Questions to consider:

- Does this activity help to reinforce concepts discussed in class?
- Are students asked to think about their process of learning and the strategies they are using for problem-solving (metacognition)?
- Are students asked to integrate pre-class and in-class learning in this post-class activity?



BEST PRACTICES AND RECOMMENDATIONS

- Provide purpose and rationale
- Be organized and clear
- Pre-class activities at the lower level of the taxonomy with reasonable workload
- Use a variety of activities for every phase, but don't go nuts
- Consider time commitment for students – moderation in out of class work
- Use other people's videos the first year; make your own the second year depending on what you need
- Ensure that the hardest work happens in class, while you're around to help! Post-class is about reinforcement.
- Take good notes of implementation



Questions and discussion?

NEXT ACTIONS DELIVERABLE

Part 1: What is the next action (one item you can do in 5 to 50 minutes) you will do to progress in your planning?

Part 2: What extra resources or information do you need to get that action done (if any)?



ACKNOWLEDGEMENTS AND REFERENCES

This material is based upon work supported by the U.S. Department of Education, First in the World Grant P116F150112. Any opinions, findings, conclusions or recommendations expressed are those of the authors and do not necessarily reflect the views of the U.S. Department of Education.

Cronhjort, M., Filipsson, L., & Weurlander, M. (2018). Improved engagement and learning in flipped-classroom calculus. *Teaching Mathematics and its Applications: An International Journal of the IMA*, 37(3), 113–121.

Davis, N. L. (2016). Anatomy of a flipped classroom. *Journal of Teaching in Travel & Tourism, 16* (3), 228-232. doi: 10.1080/15313220.2015.1136802

Talbert, R. (2017). *Flipped Learning: A Guide for Higher Education Faculty*. Sterling, VA: Stylus Publishing