

DO THE FLIP! FLIPPING YOUR SJSU CLASS

**First in the World Summer Workshop
San José State University**

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Mathur

Chalk Talk....

What motivates you to flip a class?

While getting settled in, introduce yourself to your neighbor and start filling out your Faculty Connection sheet.

What we're doing today vs what we're doing after today

TODAY

- Clarifying learning objectives for ONE topic to guide further work
- Beginning to draft
 - in-class active learning strategies for that topic
 - preparatory materials
 - follow-up practice for students

LATER

- Crafting detailed plans for the before, during, and after class meeting work for the one topic
- Finding YOUR strategies to encourage preparation for class and completion of work

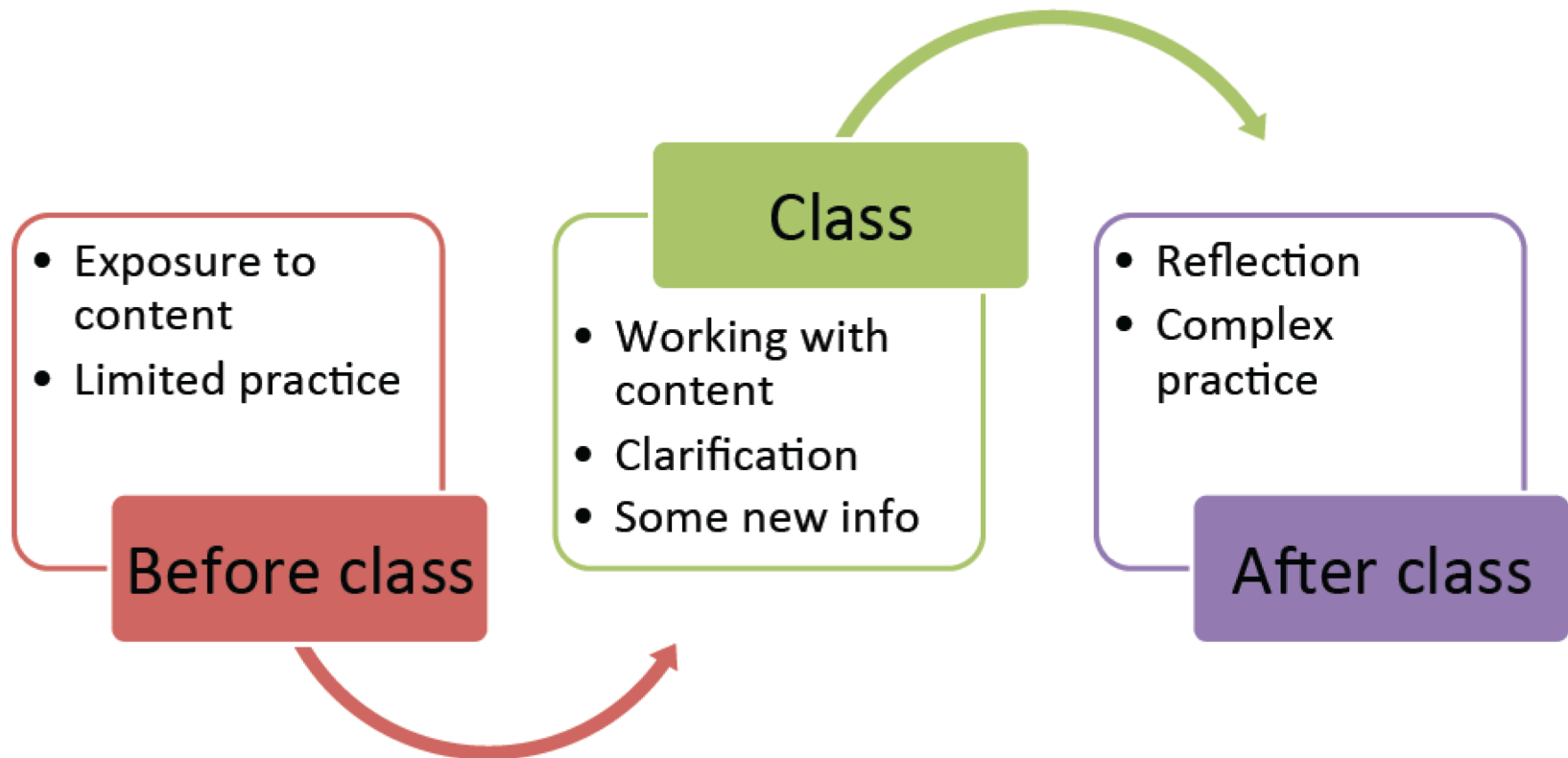
What is a lesson plan?

Detailed description of the course of instruction to guide the class learning

- Reflects critical areas of content
- Reflects needs and capabilities of students
- Outline/map of learning objectives, course activities, and aligned assessments.

Plan
plan
Lesson
plans
lesson

Components of the Flipped Model

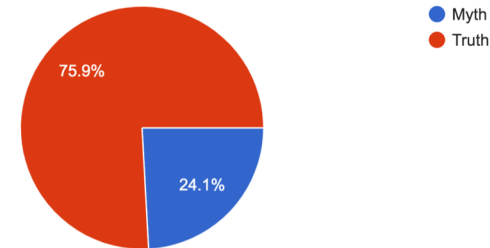


Quick Review of Pre-Class Quiz

Answers to guided practice questions varied. Many of you had the right answers 😊

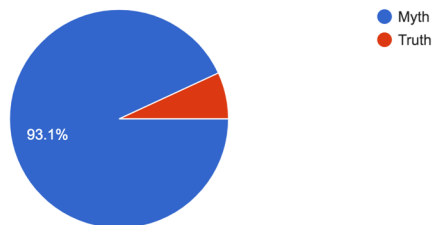
In the Flipped Learning classroom, there is a direct relationship between cognitive difficulty of course material and access to help.

29 responses



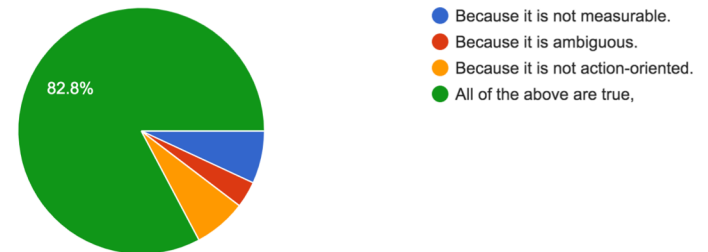
Flipped learning is putting video lectures outside of class and doing homework exercises in class.

29 responses



Why is the following an unclear learning outcome: "Students will understand techniques of integration."

29 responses



LEARNING OBJECTIVES IN THE FLIPPED CLASS

If a goal without a plan is a wish...

... a plan without a goal is busy work

Start with a topic....

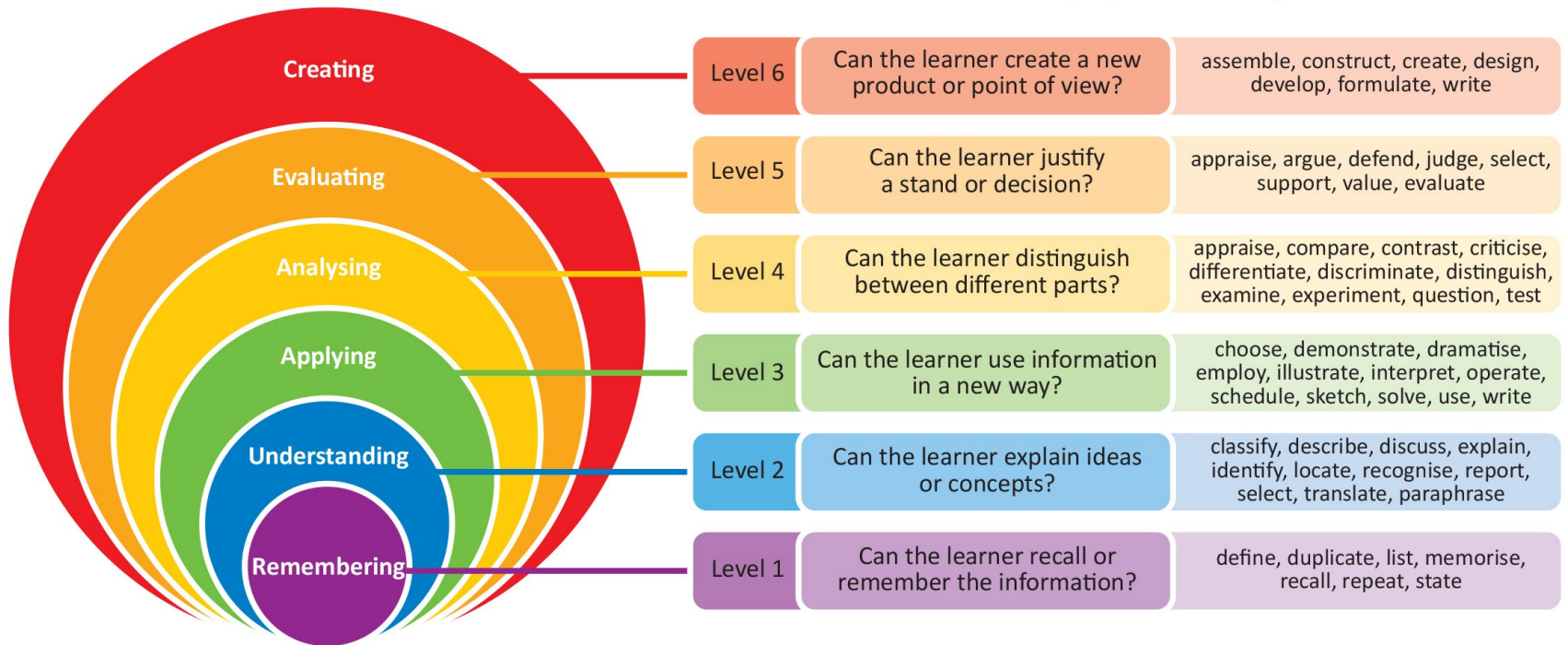
Write down the topic you selected
in the prep work from the course
that you plan to flip

Step 1: Develop Learning Outcomes

- **Fine-grained, specific, precise** – Maybe 5-10 LOs for a single concept
- **Measurable, descriptive, action-oriented** – Students DO something visible
- **Clear, unambiguous** – An intelligent non-expert can follow
- **Appropriate to the course level and student preparation** – Do-able with a reasonable level of support in the time available

Bloom's Taxonomy

Bloom's taxonomy (revised)



Step 1: Develop Learning Outcomes

- Original: Students will understand immigration policy.
- Revised: Students will be able to **describe the history of American** immigration policy.

- Original: Students will learn the programming language, Python.
- Revised: Students will use Python to **complete a data mining analysis.**

- Original: Explain the benefits of various exercise modalities for an elderly person.
- Revised: **Determine** the most appropriate exercise modality for health maintenance in the patient who is elderly.

Take Action: Write LOs (15 minutes)

Consider your focus topic or lesson and rough out as many LOs as you need.

- What EXACTLY are students supposed to learn
- What constitutes acceptable evidence that they have learned it?
- If you're not sure, put in a placeholder word.

Re-order the LOs in order of increasing complexity, simple to complex. Divide into **basic** (pre-class) and **advanced** (in-class and after class).

Discussion & Share Out (15 mins)

At your table, as a group discuss (10 mins)

- What is hard about writing LOs?
- How did you go about it?
- Sample LOs from your group

Share out (5 mins)

Learn From Someone (15 mins total)

Pair up with a person at your table, initially with somebody from your discipline or close discipline

- Exchange your ordered LOs and make notes about the **precision**, **clarity**, and **measurability** of your partner's LOs (5 mins)
- Discuss the first person's LOs (5 mins)
- Discuss the 2nd person's LOs (5 mins)

Revise & Learn From Someone Else

- Revise your LOs (10 mins)
- Exchange your **revised** LOs with somebody at your table who is NOT from your discipline.
 - Make notes about the **clarity** and **measurability** of your partner's LOs (4 mins)
 - Discuss the first person's LOs (3 mins)
 - Discuss the 2nd person's LOs (3 mins)

BREAK

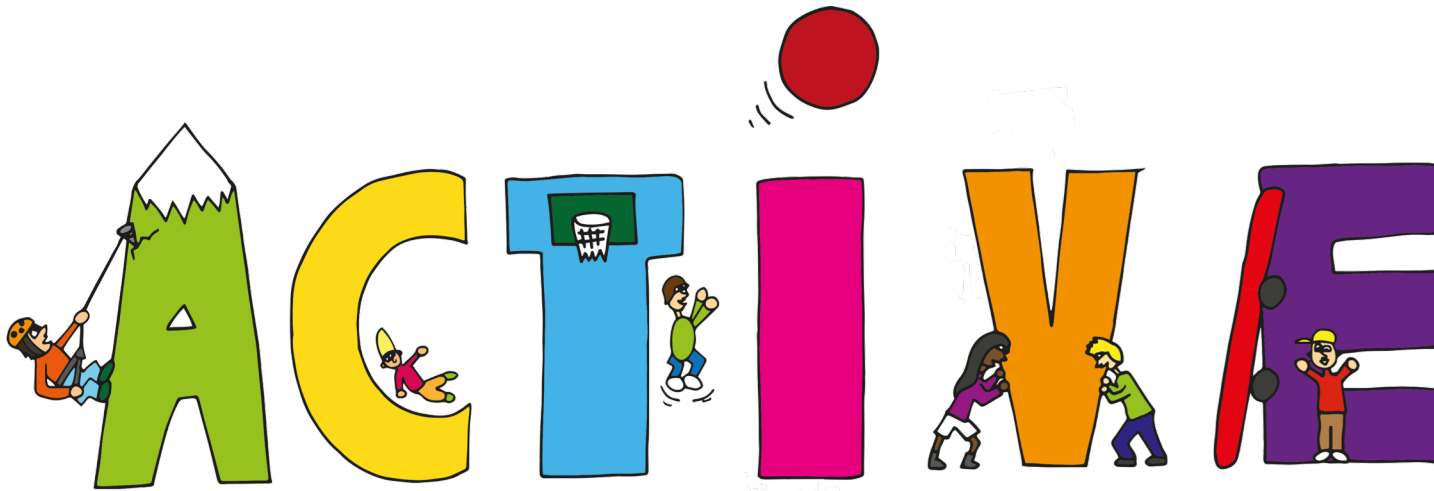


Coffee and tea



Restrooms are outside to the right

ACTIVE LEARNING STRATEGIES AND GROUP SPACE AGENDAS



Step 2a: Plan Effective In-Class Active Learning Strategies

- What is Active Learning?
 - Anything that students are doing in the classroom beyond passive listening; instructional method that engages students in the learning process
- Active learning works to *engage* students in their own learning process.

Step 2a: Plan Effective In-Class Active Learning Strategies

Individual Student Activities:

- **One/five minute problem** - pose a question and ask students to solve.
- **Muddiest point** - what was challenging from reading/out-of-class materials
- **Reading/Clicker quiz** - get feedback on student's understanding of material
- **Write a test question** - students get actively involved in thinking about more complex problems
- **Fishbowl** - use notecards to give you ideas about muddiest point and then start next class with those challenges

Step 2a: Plan Effective In-Class Active Learning Strategies

Group Activities:

- **Notes comparison/ sharing** - students actively compare notes and fill in gaps of understanding
- **Work at the board** - students physically get up and move, shared problem-solving
- **Gallery walk** - teams share ideas and respond to meaningful questions, problem-solving situations or texts
- **Jigsaw** - each member of a group is asked to complete some discrete part of an assignment; when every member has completed his assigned task, the pieces can be joined together to form a finished project

Step 2a: Plan Effective In-Class Active Learning Strategies

Explore some technology tools that can facilitate active learning in class

➤ Top 200 Tools for Education:

➤ <http://c4lpt.co.uk/top100tools/top100-edu/>

Step 2a: Plan Effective In-Class Active Learning Strategies

- Meaningful use of technology as linked to active learning
- Teams: explore one tool and discuss: **How can it be used? What are the positives and negatives of utilizing this tool for active learning? What additional tool would you recommend to others?**
- Report out!
 - **Kahoot:** <https://kahoot.com/>
 - **Slido:** <https://www.sli.do/>
 - **Menti:** <https://www.mentimeter.com/>
 - **Evernote/One Note:** <https://evernote.com/>
(<https://products.office.com/en-us/onenote/digital-note-taking-app>)
 - **Piazza:** <https://piazza.com/>
 - **Twitter:** <https://twitter.com/>

Step 2a: Plan Effective In-Class Active Learning Strategies

- Go back to your list of LOs
- Begin to map activities onto these LOs
 - Does the activity allow for effective engagement?
Does it align with your LO(s)?
 - Consider how much time these activities take to complete in class
 - Are all activities equal?
- Think-pair-share
 - Share your chosen activities with your partner.

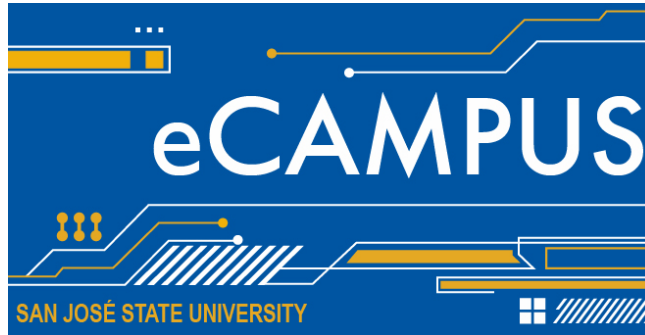
Step 2b: Formulate a class period agenda

Ceremonial Pocketing of the Cell Phones!

- 3:00 – 3:10 Unit conversion problems
- 3:10 – 3:30 Physical properties mini-lecture
- 3:30 – 3:32 Tech break
- 3:32 – 3:50 Physical properties problems
- 3:50 – 4:10 Erosion mini-lecture
- 4:10 – 4:12 Clicker quiz
- 4:12 – 4:15 Minute paper

Step 2: Effective In-Class Active Learning Strategies

Any remaining time: continue to formulate active learning ideas and your class period agenda



SJSU CAMPUS PROGRAMS AND RESOURCES

Klaus Trilck
Instructional Designer

LUNCH



Q&A WITH FLIPPED-OUT FACULTY

Ranko Heindl(Physics)

Chris Tseng(Computer Science)

Padma Tanniru(Mathematics)

PLANNING THE ADVANCED PRACTICE

What to do for post-class activities?

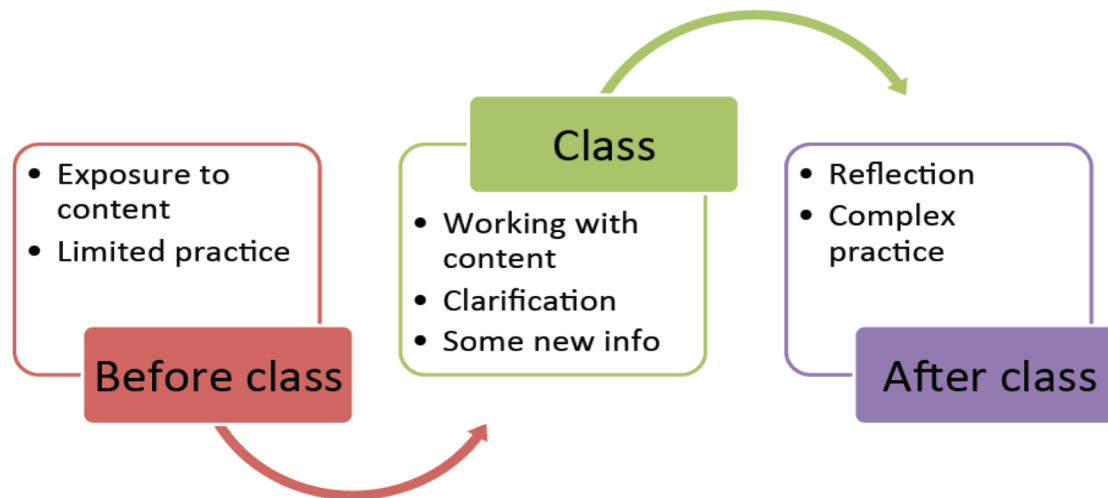
Activities and Student Workload

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 4: Post-Class Activities to Reinforce LOs

Post-class, individual space activities build on and reinforce group space work

Key components of advanced practice:

- Advanced learning outcomes
- More complex exercises
- **Reflection, integration, and metacognition**

Step 4: Post-Class Activities to Reinforce LOs: Options beyond problem sets

- Signature assignments
- Formal writeup of in-class work
- Discussion board
- Study guide/exam question
- Reflection:
 - Identify methods of learning that worked well or not
 - Learning journal – motivation, affect, & behavior
 - Writing to integrate ideas
- Long-term project
 - Planning upcoming work – project milestones and future plans

Step 4: Post-Class Activities to Reinforce LOs

Take a few minutes to write down some initial ideas. Then chat with your partner or table.

Step 4: Design Post-Class Activities and Reinforce LOs

Quick think:

- What do you do currently after class to reinforce course content?
- What additional reflective or integrative activities would reinforce student learning?

Share with a partner

- Consider challenges of post-class
- Sufficient reflection and practice as linked to the LO

BREAK



Coffee and tea

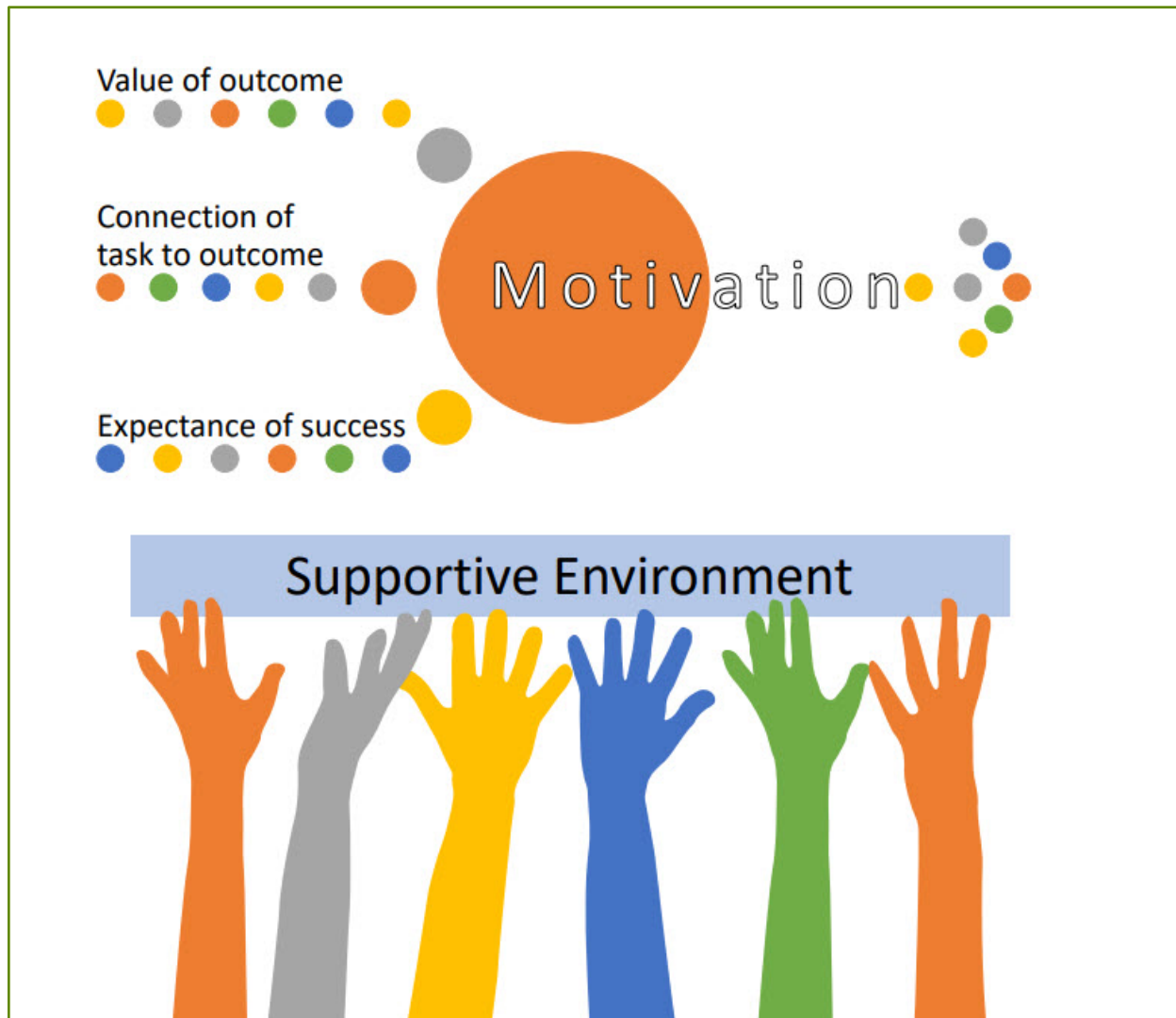


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PLANNING THE GUIDED PRACTICE

What to do for Pre-class activities?

How do I get them to do the work???



Step 3: Pre-Class Instruction

Key components:

- Overview – Why do we care?
- Basic learning outcomes that students can handle on their own
- Content acquisition activities
- Exercises/tasks to demonstrate learning outcomes and provide accountability

Step 3: Pre-Class Instruction

Key characteristics:

- Clear instructions – the guided practice!
- Chunkable, engaging, variable activities
- Reasonable effort
- Failure-tolerant
- Support

A Week's Layout

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
	CLASS		CLASS		CLASS	
Advanced homework from LAST WEEK due			Prep work for NEXT WEEK due			
Complete leftover AP work	Work on Monday AP section	Do prep work for next week	Work on Wed. AP section	Take a break!!	Work on Friday AP section	Take a break!

- Make Guided Practices and Advanced Practice available EARLY – three weeks ahead is not unreasonable.
- Have one GP doc for the entire week
- Have one AP doc, but split into sections.

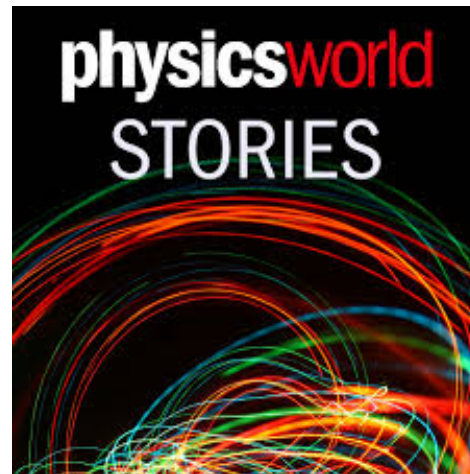
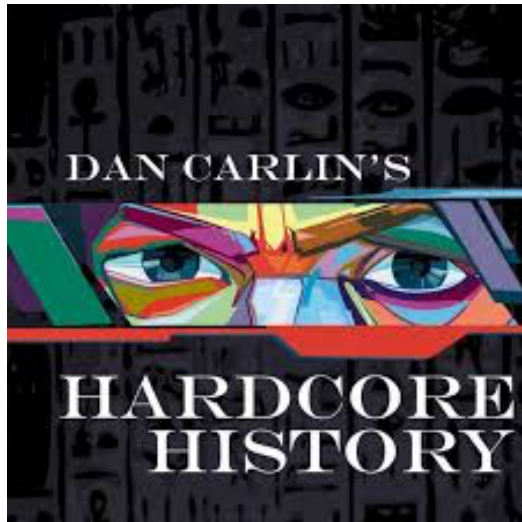
Step 3: Pre-Class Content Acquisition

Simulations



Step 3: Pre-Class Content Acquisition

Podcasts or radio



Step 3: Pre-Class Content Acquisition

Read: Textbooks, trade mags, primary sources



Step 3: Pre-Class Content Acquisition

Talk to someone



Simple experiment

Step 3: Pre-Class Content Acquisition

VIDEOS

Time consuming any way you go:

- Make your own – avoid the first time
- Select and curate other people's



Must be captioned and possibly have audio descriptions

STEP 3: Options for Accountability

- Online quizzes, if you must
- Quiz in class
- Submit a question
- Submit a summary
- Brain dump
- Reading notes
- Chalk-talk
- Mind-map
- Pre-class discussion board
- ...what else can you think of? – brainstorm!

Best Practice and Recommendations

- Provide purpose: clear, relevant learning outcomes
- Pre-class work reflects lower levels of Bloom's
- The hardest work happens in class, with your help!
- All activities are organized, with clear instructions
- Workload is reasonable
- Use existing videos at first; create new ones depending on what you need
- Use a variety of activities but don't go nuts
- Take detailed "field notes"
- Calendar your flip project

NEXT STEPS....



Deliverables for \$250 stipends: **Due by June 28th**

A flipped class lesson plan for one topic, including:

- The guided practice
 - The plan for in-class activities
 - The advanced practice
- First review by your flipped colleague (suggested peer review deadline June 17th, feedback to peer by June 21st). Can determine earlier deadlines!
 - Second review by us. Completed package due: **June 28th.**

Questions? Contact Ravisha (Ravisha.Mathur@sjsu.edu)

Workshop Submissions Folder:

<https://tinyurl.com/SJSU2019Flipped>

The Mini-Grant

- Call for brief proposals will come out in June (Deadline to submit application is for **July 26th**)
- Grant will provide funding in Fall 2019 for developing at least 50% flipping for an undergraduate class
- This is a competitive process!

Wrap-up and Evaluation



Finish connect with colleague...
Complete the evaluation...