

Interactive learning in lecture classes



You are about to do a small short term memory test. A few letters will flash on your computer monitor for 3 seconds

Ready

K X C E J O

Recall

Please write down the letters you just learned...

K

Z

X

S

D

C

E

B

J

O

K X C E J O

K X C E J O

What strategies you used?

Which letter was the first one you recalled?

Which letter was the last one you recalled?

Let's go over what just happened?

Let's go over what just happened?

- Start with an activity
- Integrate points into demonstration
- Clap hands / Raise to engage the audience



What Does a Middle/High School Class Look Like?

It is...

Tips for Your Splash Class

Short (45-90 min)

- If you have a longer class (>45 min), schedule a break(s) for your students
- Divide your class into smaller chunks of time
-

Not Lecture Based

- Incorporate hands-on activities or worksheets
 - Encourage small group work or discussions
 - Avoid “one-way” lectures – what makes your class different than watching a video?
 -
-

Promoting Active Learning

ABOUT ACTIVE LEARNING



"Active learning" means students engage with the material, participate in the class, and collaborate with each other. Don't expect your students simply to listen and memorize; instead, have them help demonstrate a process, analyze an argument, or apply a concept to a real-world situation.

Students learn more when they participate in the process of learning, whether it's through discussion, practice, review, or application (Grunert, 1997).

Examples from previous Splash classes

How to Win All the Time

Stanford Splash Spring 2015

Zandra Vinegar



<https://www.youtube.com/watch?v=yNyPMSeGJ2M>

Practical Neuroscience

Stanford Splash Sprint 2015

David Carreon



<https://www.youtube.com/watch?v=kUVkrM7vGdg>

Life of War: Becoming a Spartan

Yale Splash Summer 2013

John Urwin



<https://www.youtube.com/watch?v=a7pkxqklm4k>

How to catch a bad guy or become one using math

Stanford Splash Fall 2015

Jake Hillard & William Kuszmaul



<https://www.youtube.com/watch?v=sWvPsFqldq0>

Practice what they learn on real world cases

A screenshot of the Stanford News website header. The top bar is dark red with the Stanford logo and 'News' on the left, and a search bar on the right. Below the bar are navigation links: Home, Find Stories, For Journalists, and Contact. The main content area has a light gray background and features a date 'JUNE 15, 2016' in red, followed by a large black headline about a big data study on racial disparities in Oakland. A short paragraph of text follows, describing the study's findings and recommendations.

Stanford | News

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JUNE 15, 2016

Stanford big data study finds racial disparities in Oakland, Calif., police behavior, offers solutions

Stanford researchers analyzing thousands of data points found racial disparities in how Oakland Police Department officers treated African Americans on routine traffic and pedestrian stops. The researchers suggest 50 measures to improve police-community relations, such as better data collection, bias training and changes in cultures and systems.

<http://news.stanford.edu/2016/06/15/stanford-big-data-study-finds-racial-disparities-oakland-calif-police-behavior-offers-solutions/>

Sample questions to bridge class materials to real world samples....

1. What is the research question?
2. What are the variables?
3. Are we looking at counts / proportions, quantitative data, something else? Do we have categorical grouping variable(s) and a response variable, two quantitative variables, a single variable?
4. How were probability and / or statistics useful here?



- **Call out for volunteers**
 - Recreate scenes/ideas in videos
 - Demonstrate an idea
- **Use technology**
- **Engage the entire class**
 - Classroom opinion polls: clap hands, raise hands, sticky notes
 - Picture prompt / Think break
- **Pairs and groups activity**
 - Think-pair-share
 - Wisdom of another

Let's share and brainstorm!

- How would you incorporate what you just learned in your class?
- Any other teaching tips/ideas?



Adopt student centered learning strategies

Make students an active and responsible contributor in their own learning



Resources

Splash Website

→Student Reg Guide

For Splash Teachers

Walk-in reg. is open!

Deadline is April 16

Click the "Teach" tab for more information.

→Registration Details

(Classes, Training, etc.)

→View Your Schedule

→View/Edit Your Public Teacher Profile

→Teacher Reg Guide

→Teacher Resources

Splash Teacher Lesson Plan and Class Material Database

All files have been contributed by experienced Splash teachers and are free to use, share, and modify.

Want to contribute your own past Splash class materials? Upload them [here](#).



Teacher Resources

Biological and
Created Jul 20

Chemical and
Created Jul 20

Earth and Pla
Created Jul 20

- Expectations and Tips for Teaching Middle and High School Students
 - [Expectations and Tips](#)
 - [What Does a Middle/High School Class Look Like?](#)
- Lesson Planning
 - Files will be uploaded soon
- Leading and Encouraging Discussion in Seminar Classes
 - Files will be uploaded soon
- Sensitive Topics and Inclusive Environments
 - Files will be uploaded soon
- Interactive Learning in Lecture Classes

Splash Teacher Workshop Materials

Splash Teacher Resources

Class Ideas

- [Previous Stanford Splash Course Catalogs](#)
- Previous MIT ESP Course Catalogs
 - [Splash 2016](#)
 - [Spark 2016](#)
 - [HSSP Spring 2017](#)
- Previous Yale Splash Course Catalogs
 - [Splash Spring 2016](#)

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Teaching Talk

Get ideas to answer your teaching questions and contribute to the conversation.

