

Active and Collaborative Learning

Quick and powerful ACL
techniques

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Active and Collaborative Learning

Anyone? Anyone ?



<https://youtu.be/uhiCFdWeQfA>

Level 1 - Informal ACL

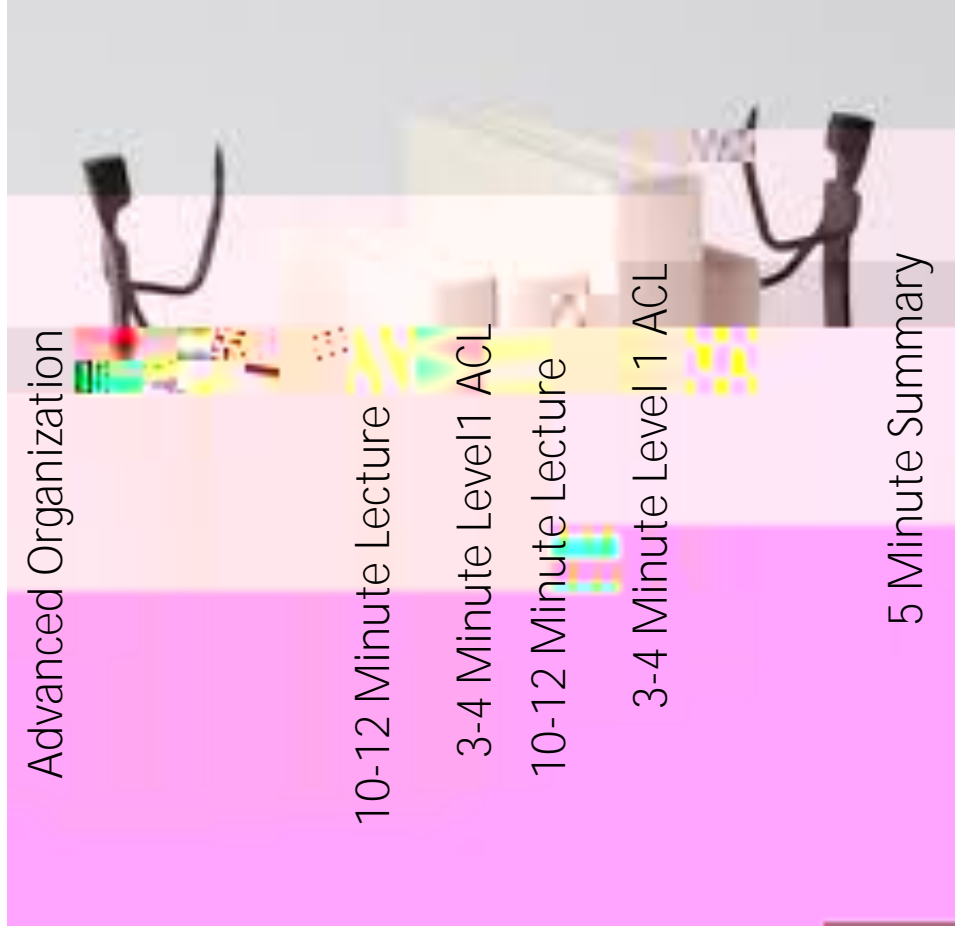
Can be used at any time in any class

Typically short duration

Provides an opportunity for students to process material they have been listening to (Cognitive Rehearsal)

May be used to break up a long lecture -

Level 1 - Informal ACL



Level 1 - Informal ACL

- 1) If an activity doesn't appeal to you, don't use it!
(faculty comfort level!)
- 2) Don't make these activities a chore or burden!
- 3) Don't try activities on students before you try on yourself (or other faculty)!
- 4) Allow for more time than you think you need to carry out and respond
- 5) Make sure to "close the loop" – let students know results/changes

ACL Activities

Think Pair Share (formal or informal ACL)

Write Pair Share (formal or informal ACL)

Quick Thinks (individual or informal ACL)

Minute Papers (individual ACL)

Think-Pair-Share

Pose a question

Give time for students to THINK

This is very hard for faculty to do!!

Have students PAIR up

Can be informal pairs (neighbors) or formal

They discuss their answers –

How could you call on students?

1. Common: Ask the question – pause – call on a student (randomly?) – pros/cons?
2. Directed: Call on a student (randomly) – pause – ask the question - pros/cons?
3. Volunteer: Ask the question – pause – (wait for a raised hand) - pros/cons?
4. Jump ball: Ask the question – pause – “Anybody?” - pros/cons?
5. Choir: Ask the question – pause – “Everybody” - pros/cons?

Random Calling

Keep students focused – know they could be called on randomly

Avoids having “best/loudest/outgoing” students dominating with answers

Multi-sided dice

Facts (birth months, drive time, hometown, etc.)

Random Generator (excel)

CTL Resource (add student names – CTRL-F9 to reshuffle)

Popsicle sticks with names on one end

Have container – sticks go in, names down

After choosing stick – leave out, or return?

Ask question first – then pick student!!

Think-Pair-Share variations

Clickers

A	B	A	B
C	D	C	D
E	F	E	F

Letter cards

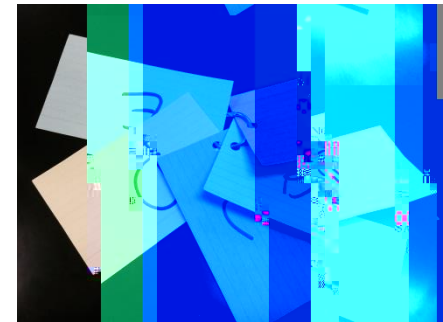
Show vote to YOU, not to others in class

Not "anonymous" – maybe take more care?

Quick and low-tech! (Color?)

Colored Index cards

Fingers



Based on % correct – go on, or go back?

Think-Pair-Share Students Feedback

94% students agree that the in-lecture clicker questions add to their understanding and interest in the course.

Think-Pair-Share variations

polleverywhere

<https://www.polleverywhere.com/>

What Are Possible Types of ThinkPairShare questions?

Possible Types of ThinkPairShare questions

Multiple choice (clicker questions)

Hopefully more discussion needed

Ranking tasks (RT) (maybe only w/ calculations?)

Who is more to blame? Who is more honorable?

Conflicting Contentions Task (CCT)

Give possible answers to question – students decide which answer is best

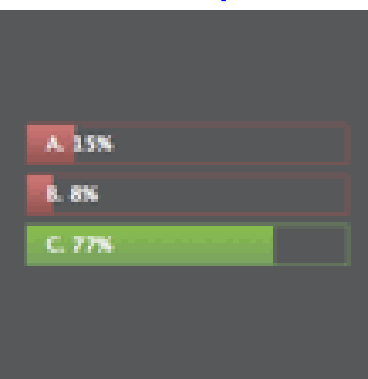
What if anything is Wrong Task (WWT)

Show a solution/conclusion/hypothesis – is it correct, if not what is flawed?

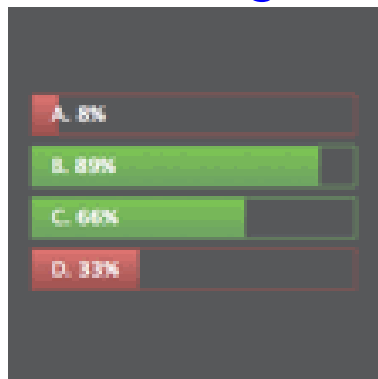
Think-Pair-Share variations

Learning catalytics

<https://learningcatalytics.com/>



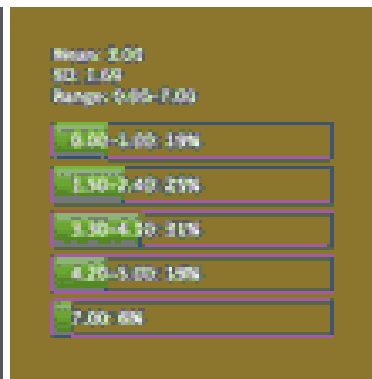
Confidence



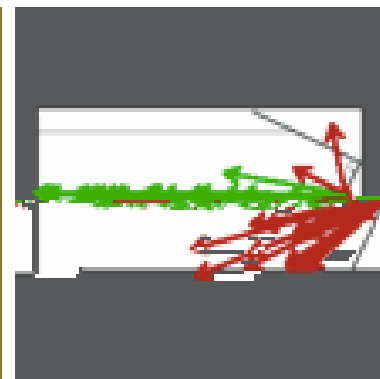
Many Choices



Composition Sketch



Data Collection
(histogram)



Direction



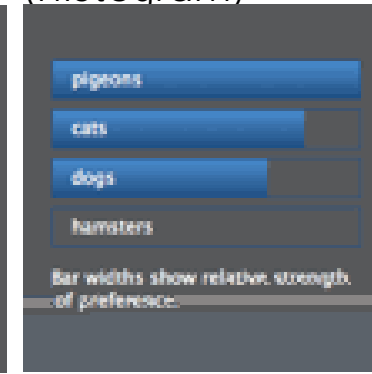
Image Upload

A text input field containing a question: "The E field effort to push an electron across the..." followed by several lines of text that are mostly illegible due to blurring.

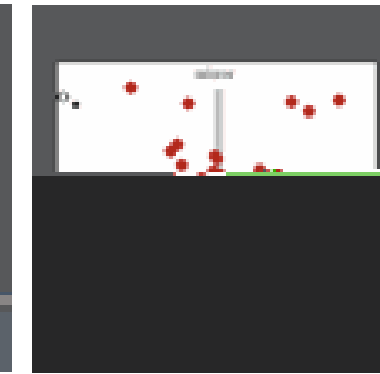
Free Response



Ranking



Priority



Region

Think-Write-Pair-Share

A large, empty rectangular box with a thick green border, occupying the lower half of the page. It is intended for students to write or draw their thoughts during the 'Think-Write' phase of the activity.

How to get TWPS questions?

Search for "clicker" questions

Textbook (FE exam questions)

Make them up yourself!

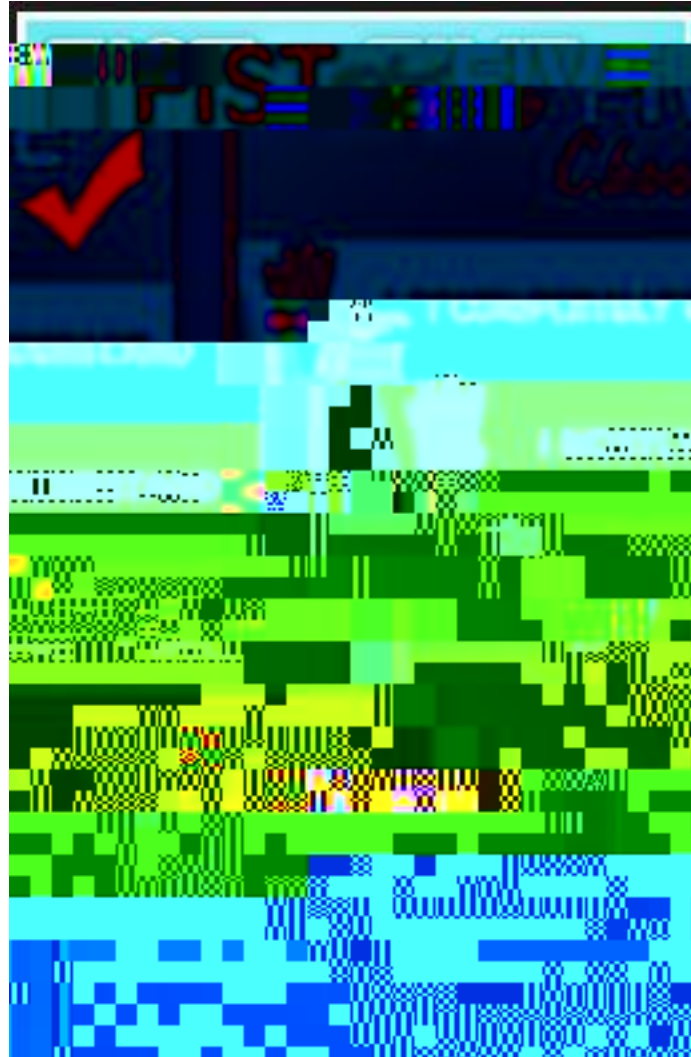
Formulate/Share/Listen/Create

1. Formulate your answer to the question individually.
2. Share your answer with your partner.
3. Listen carefully to your partner's answer. Note similarities and differences in your answers.
4. Create a new answer that incorporates the best of the ideas. Be prepared to present your answer if called upon.

Good for problems with multiple possible solutions

Quick Thinks

A very quick think – with feedback for the instructor



Quick Thinks

- Reorder the steps of a solution
- Paraphrase the idea
- Correct the error
- Support a statement

Johnston, S. & Cooper, J. 1997. Quick thinks: Active- thinking in lecture classes and televised instruction. *Cooperative learning and college teaching*, 8(1), 2-7.

Quick Thinks

Example: think of one ACL technique you can use in your own class. How you would implement it?

Be prepared to explain your example to the audience.

Minute Paper

What was the most useful or meaningful thing you learned during this session?

What question(s) remain uppermost in your mind as we end this session?

What was the "muddiest" point in this session?

Give an example or application

Explain in your own words . . .

Angelo, T.A. & Cross, K.P. 1993. Classroom assessment techniques: A handbook for college teachers. San Francisco: Jossey Bass.

Minute Paper

Example:

What was the most useful thing you learned during this session?

What question(s) remain uppermost in your mind as we end this session?

Five Minute Paper

Time at end of class

Muddiest Point

What is the muddiest point in _____?

Students jot down a short answer

Mechanism to collect in class – review?

How might that be done?

An example of “Just In Time” teaching

Maybe at end of the class – collect

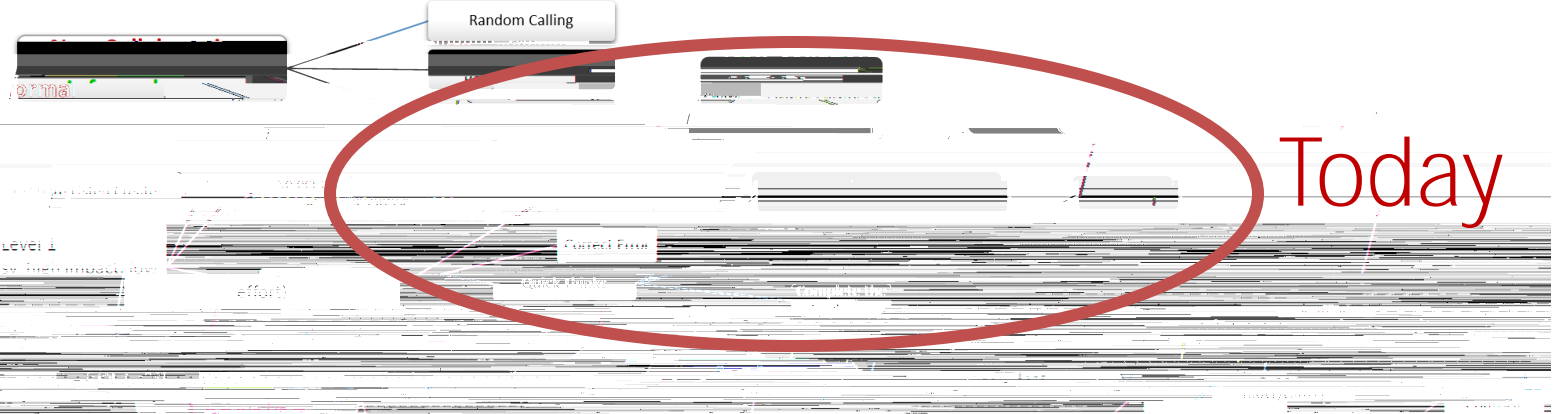
Start next class going over problem-areas

Easy to do – harder to respond (faculty)

Can't just give the same “lecture” again

Possibly use another activity to help?

More about Active Learning



KEEN Summer Workshop

Active
Collaborative
Learning

Problem
Based
Learning

Entrepreneur
-ial Minded
Learning

What: KEEN Summer Workshop on ACL, PBL and EML

When: May 23-26, (3.5 days)

Where: On Campus at WNE

Compensation Stipend:

\$750 paid upon completion of May Workshop 2016

\$1000 paid upon completion of report-outs (meetings and written report)

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