

# How Many **Drones** in Last Slide?

- a. 4.... Drones
- b. 5..... Drones
- c. 6..... Drones
- d. None of the Above



Answer 5



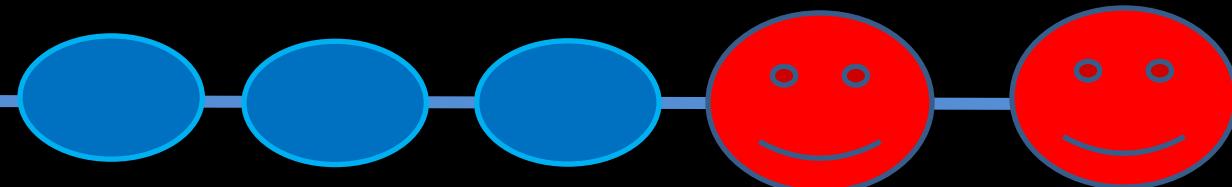
# APCUG - 2019

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Florida Technology Conference

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November 9 and 10, Zephyrhills





Carl Lofstrom

A  
LEA



# Peer Instruction Active Learning

Professor Eric Mazur, Harvard

Watch Videos Before Class

<https://www.youtube.com/watch?v=Z9orbxoRofI>

[https://www.youtube.com/watch?v=l\\_7L0tOl4v4](https://www.youtube.com/watch?v=l_7L0tOl4v4)

# **“Flipped Classroom”**

**Important Take Away from Videos**

Assign pre-class homework  
consisting of **digital readings**  
and **watching videos.**

Note: This frees up classroom time to  
promote **active learning.**

# “Curse of Knowledge”

Important Take Away from Videos

Curse occurs when instructor communicates with members,  
unknowingly assuming  
other members have the background to understand.

# % of Change Since 1978

Fill Circles: 0%, 500%, 700%, 1,400%

- a. EDUCATION %.
- b. HOUSING %.
- c. MEDICAL %.
- d. SPENDING MONEY





# Business Model of Traditional Colleges and Universities ***Broken***

- Over **4,000** colleges and universities in the United States,
- Harvard Business School Professor Clayton Christensen says, **next few decades**,

**“Half *Bankrupt*”**

— — — — —

- (Google)



# Robots Could Replace **800 Million** Jobs by 2030

“Everything we teach  
should be **DIFFERENT**  
from **Machines**.”

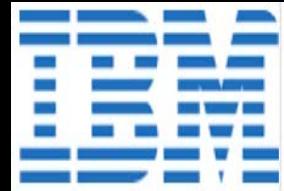
Jack Ma, CEO Alibaba,  
China's Richest Man

# 700,000 Open Tech Jobs

- The U.S. has more than 700,000 open technology jobs.
- Universities **producing only about one-tenth** that number of computer science graduates.
- **Reskilling/upskilling** efforts needed.

We're HIRING

# The **R**ise of Corporate **C**olleges

- Colleges **are not** producing enough graduates with the **skills** companies need.
- Corporations Like     
**partnering w/community colleges** and alternative credentialing programs to build worker pipelines.



- **Driving the news:** Virginia Gov. Ralph Northam
- Cloud computing degree program developed with:

## Amazon Web Services.

- Expanded to colleges statewide in Virginia.





# Online Learning

- First **Disruptive** innovation in education since printing press: **online learning** could wreak even more havoc as students enroll in online learning experiences. (\$4 Billion Industry)
- Nearly **20%** of students are **now enrolled** in a mostly **online** program.



- ✓ Discover **thousands** of **free** online courses + **MASTERS** Programs.
- ✓ Top universities around world....  
MIT, Stanford, Harvard, USC.
- ✓ 100 million + students.

**<https://www.classcentral.com/login>**

# Online Tech Dictionary



**How many words  
and phrases:**

- a. 6,000
- b. 10,000
- c. 15,000
- d. None of  
the above

# **Answer**

**10,000**

**Lookup technical definitions  
and record on Flash Cards.**



alexa

Hey Cortana

OK Google

Hey Siri

• New Word

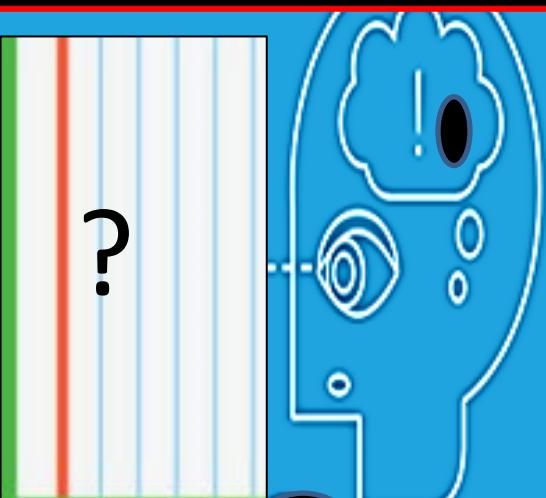


• Definition

# Use Flash Cards

## ACTIVE RECALL

Think of Answer  
in Your Head



1

## METACOGNITION

Rate Your  
Confidence

Don't  
Know



Mem  
orized

2

## SPACED REPETITION

Helps You Learn Faster



3

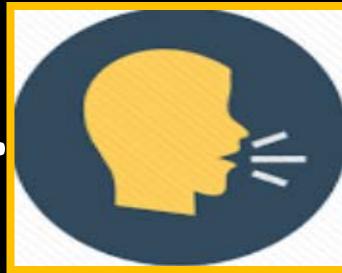
# After **Two Weeks** We Tend to Remember

- ✓ 10% of what we **read**. 
- ✓ 20% of what we **hear**. 
- ✓ 30% of what we **see**. 
- ✓ 50% of what we  & 

# After Two Weeks We Tend to Remember

What % of we..

**Say.....**



&

**Do.....**



- a. 90%
- b. 75%
- c. 60%
- d. Trick Question

Answer a.

Most members lose

focuss at minutes?

a:10

b:15

c:30

d:60

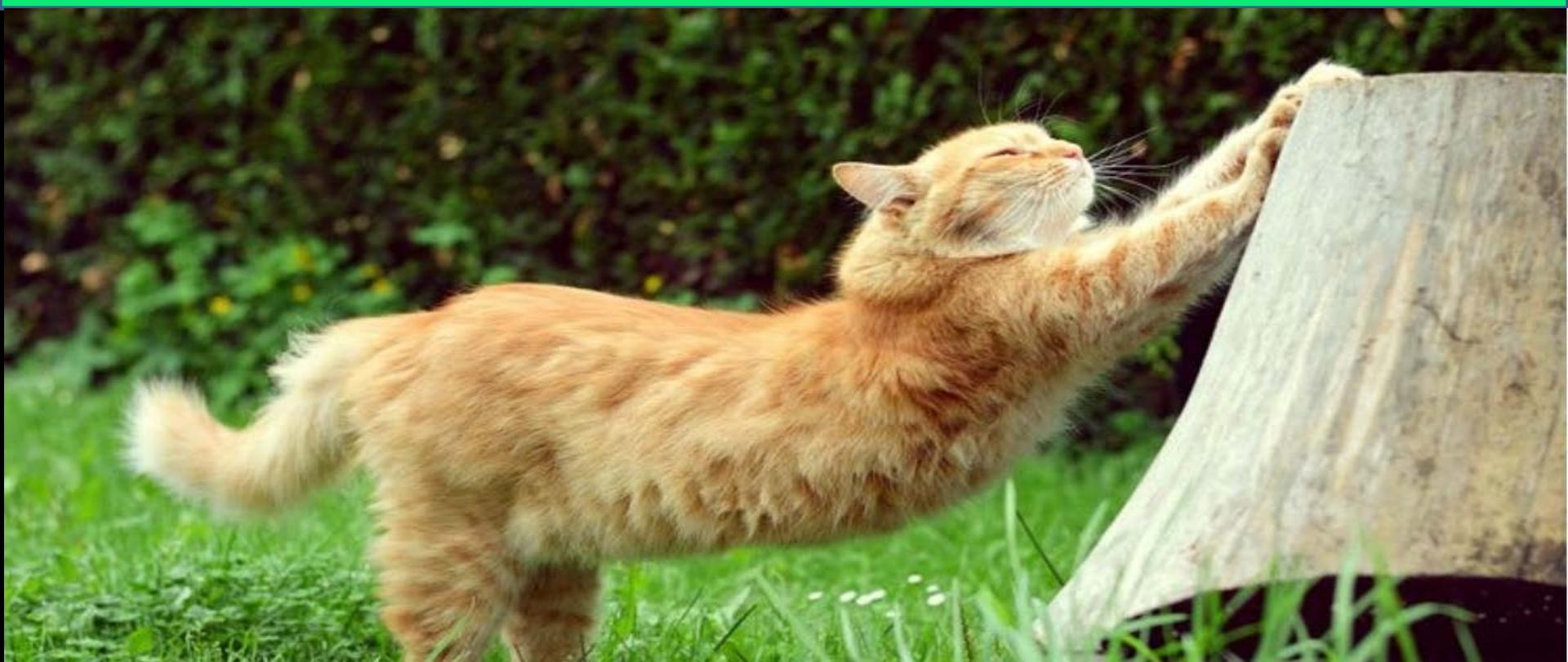
Answer a.

# Why



After 10 minutes Members start to **check out** and to keep there interest tell a **short story** or do a **stretch exercise** before continuing with the lecture.

# stretch BREAK



# Active Learning Classroom



- ✓ Round Table for Six
- ✓ Chairs on **wheels**.
- ✓ Power source - table.
- ✓ Monitors.

- ✓ White Boards.
- ✓ 35 mm Projector.
- ✓ Lighting.
- ✓ Internet with **Wi-Fi**

# Peer Instruction for Active Learning



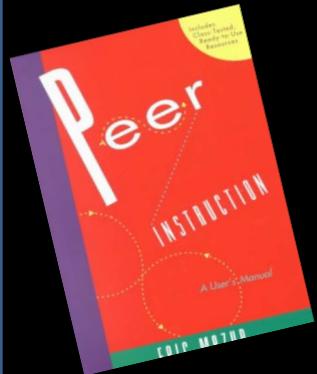
**APCUG - 2019 Florida Technology Conference**  
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# Peer INSTRUCTION

Developed by



Professor Eric Mazur  
Harvard University

Skip If You Already Watched.

<https://harvardmagazine.com/2012/03/twilight-of-the-lecture>  
<https://epdf.pub/peer-instruction-a-users-manual.html>



# Peer INSTRUCTION

Instructional strategy  
for engaging members  
during class through a  
structured questioning process  
that involves every member.





# Peer INSTRUCTION

- ✓ Read assigned reading before Class.
- ✓ In class take Quick Test on Material.
- ✓ Show your Answers Using Flash Cards. A B C D
- ✓ Try to Reach a Consensus.

Convince your Neighbor

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# Five Step **Peer** INSTRUCTIONS (1-2)

1. **Lecture** interspersed with **multiple-choice** questions, designed to **expose common difficulties** in understanding material.



2. Members have **1-2 minutes** to think about the question and then **show Flash Card indicating answers individually.**

# Five Step **Peer** Instructions (3-5)

3. Members have 2-3 minutes to discuss their answers in groups of three to four, and told to **“convince-your-neighbor of your answer”**
4. Another **Flash Card Report** taken of the class revised answers.
5. **Instructor discuss** the question and answer together with the class.

# Peer INSTRUCTION - Tip

Members should **trust their first instinct** and stay with their initial answer on a multiple choice test?

- a. Yes \_
- b. No \_



# Active Learning

Form of learning in  
which **Teaching**  
**Involve Members**  
in the  
Learning Process  
more directly.

# What is Active Learning?

Members solve problems, answer questions, formulate questions of their own, discuss, explain, debate, or brainstorm during class.

Problem-  
Based Learning

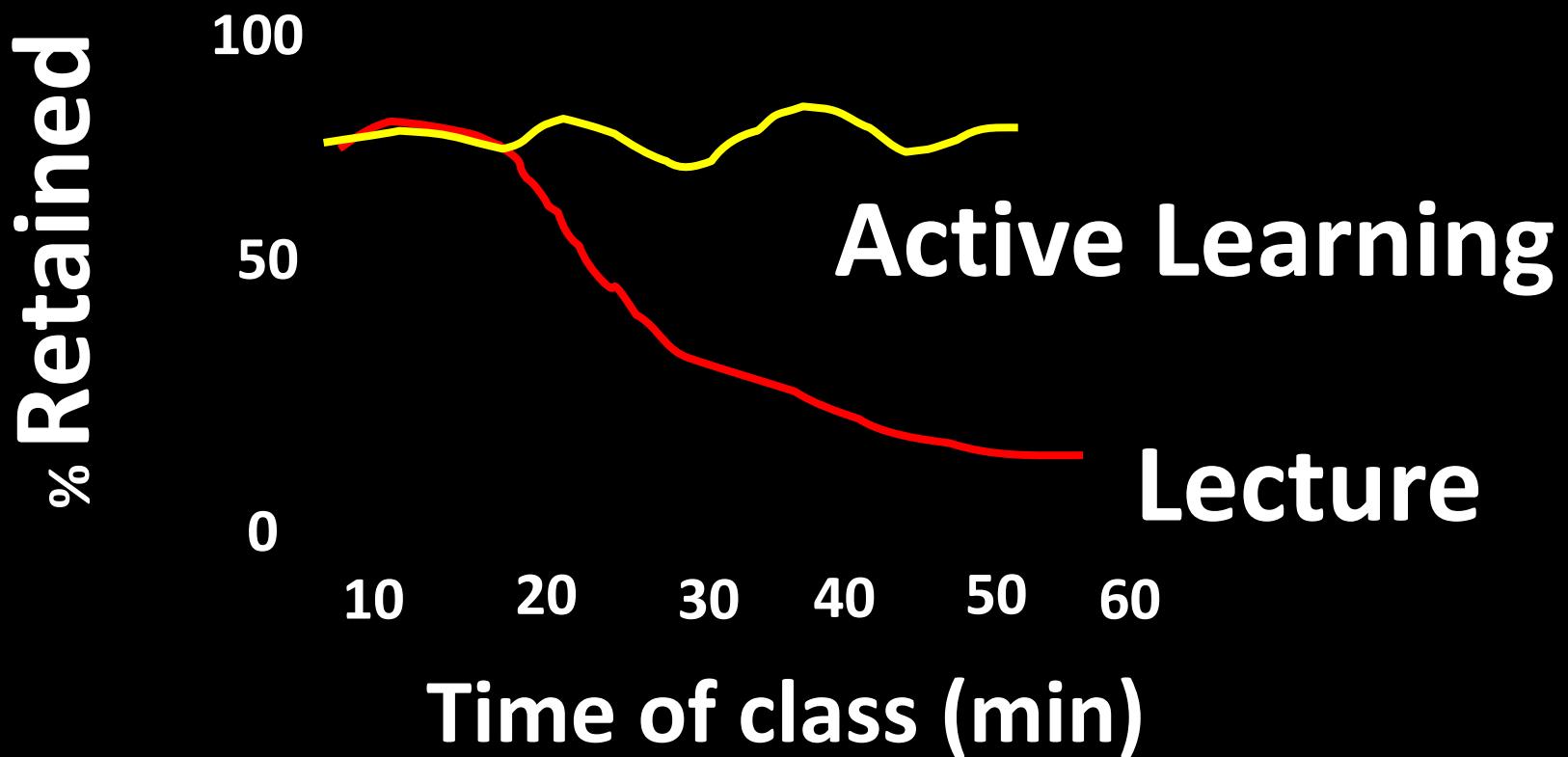
Learn by  
Doing

## Active Learning

Cooperative  
Learning

Inquiry-Based  
Learning

# What is Active Learning?



: McKeachie, *Teaching tips: Strategies, research and theory for college and university teachers*, Houghton-Mifflin (1998)

# Why use Active Learning?

- Provides instructors with  feedback about what members are learning.
- It helps members gauge their own understanding.
- Collaborating promotes community and connection between members.
- It **encourages** participation for quiet or passive members.



*Passive lectures give members a reason to stay  
home increasing your groups risk for failure.*

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# WARNING!

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# WARNING!

*Passive* lectures give  
members a reason to  
stay home *increasing your*  
*groups risk for failure.*



Make the Change!!!

Focus on  
Skill Mastery  
not  
Knowledge Acquisition

# Learn Useful Computer Skills

## Examples

- Browse the Internet.**
- Use email.**
- Manage your finances.**
- Play games.**
- Download- watch movies.**
- Listen to music.**
- Stay in touch with friends and family (via social media software.)**

## Examples

- Sharing photo albums.**
- Shopping online.**
- Edit your own video and photos.**
- Write letters.**
- How to Secure Your Computer.**
- Buying and Selling on eBay.**

# Northstar Digital

## Literacy Assessment

- ✓ Essential Computer Skills
- ✓ Essential Software Skills
- ✓ Using Technology in Daily Life

<https://www.digitalliteracyassessment.org>

# Take Active Learning Seriously

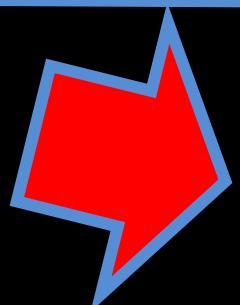
- Let us turn passive, note-taking members into active, de facto *teachers* who can help explain their ideas to each other.
- Lets encourage a shift from "teaching" to "**helping members learn.**"
- Active learners take new information and *apply it*, rather than merely taking note of it.



# APCUG-User Groups

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I challenge you today  
to be the **first** in  
(**Peer** Instruction & **Active** Learning)  
because  
**Members** will **Follow** you.

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Pick “~~Active Learning Drone~~”

Red, White or Blue, Flying to the Top”