



Teaching for Learning:  
Evidence-Based Approaches for Online  
and Blended Learning

ETSU 2024

UNIVERSITY

ABA



Claire Major

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College of Education

Director,  
Teaching Academy  
The University of Alabama



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3 premises

1 argument

7 principles

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CROSS  
ACADEMY

<https://kpcrossacademy.org/>





What questions do  
you have?







3

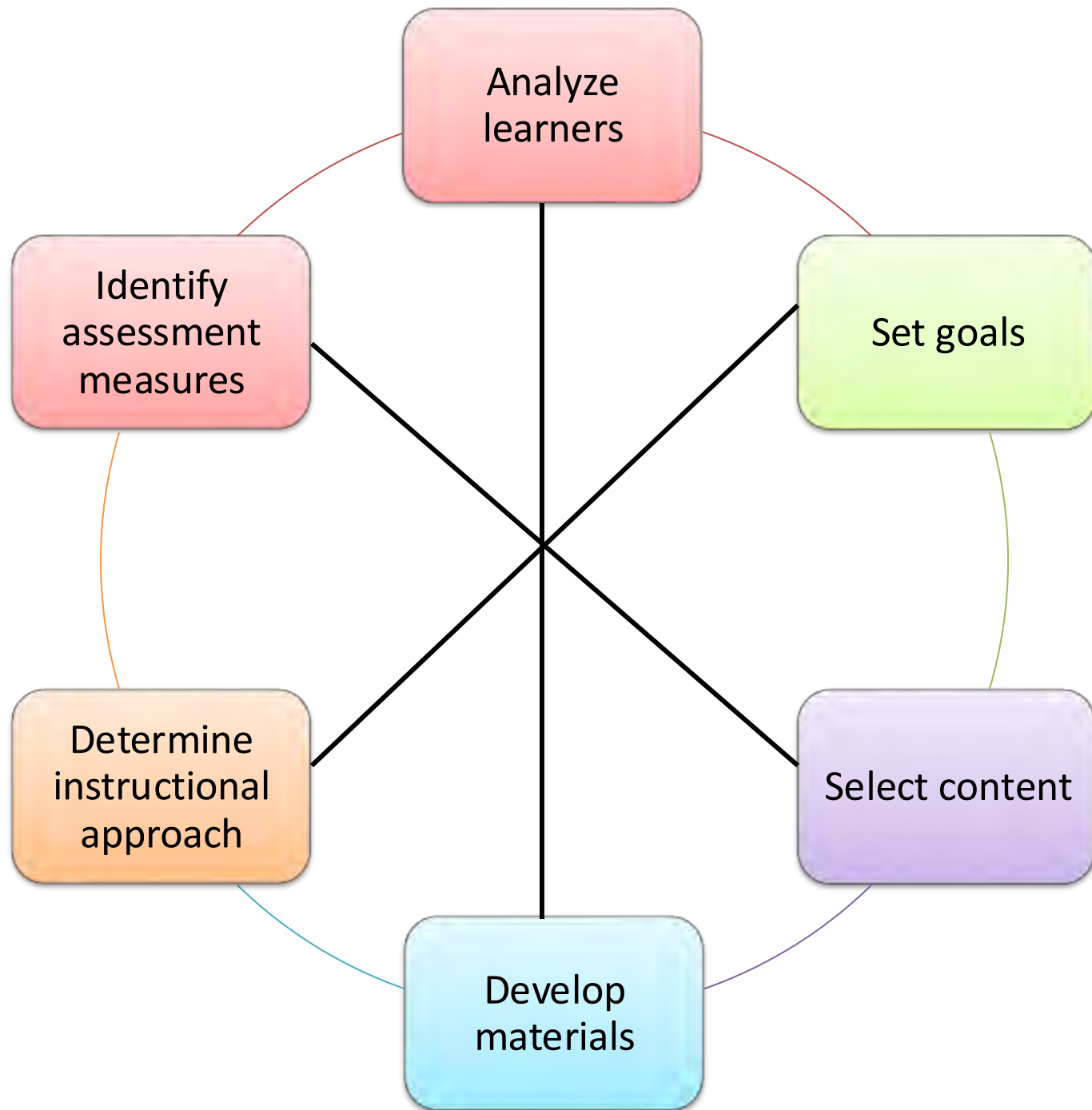
Premises

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# Premise 1

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Teaching is a complex activity



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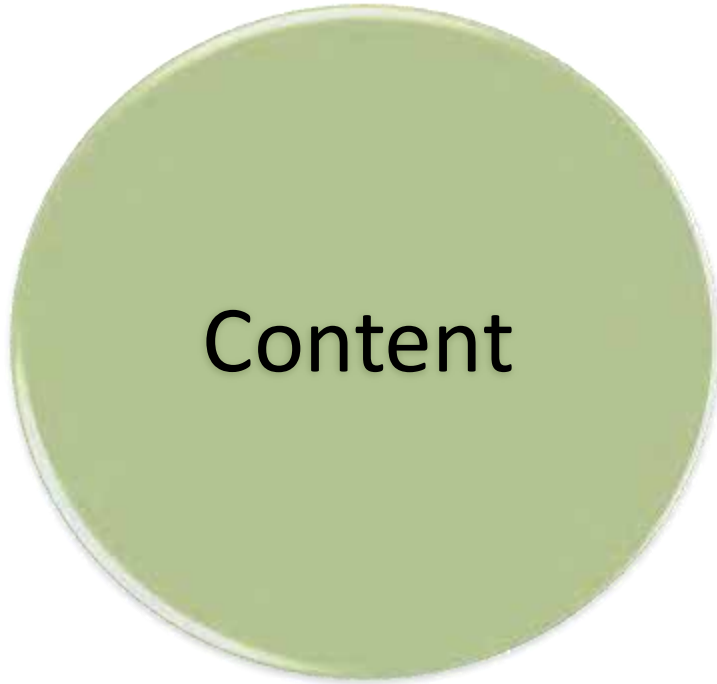
# Premise 2

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Good teachers have  
specialized knowledge  
that helps them  
make pedagogical decisions





**Content**



**Pedagogy**



**Content**

**Pedagogy**

# Pedagogical Content Knowledge

- Knowing what strategies will work best for teaching...
- What you have to teach...
- To whom you have to teach it...



What happens  
when  
you don't know  
either the  
content or  
pedagogy well  
enough?





A Venn diagram consisting of two overlapping circles. The left circle is light green and contains the word "Content". The right circle is light purple and contains the word "Pedagogy". The overlapping area in the center is shaded in a darker, muted greyish-purple color.

**Content**

**Pedagogy**



The diagram consists of two overlapping circles. The larger circle on the left is light green and contains the word 'Content'. The smaller circle on the right is purple and contains the word 'Pedagogy'. The two circles overlap on their right and left sides respectively, with the intersection area appearing as a darker shade of the overlapping colors.

**Content**

Pedagogy



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# Premise 3

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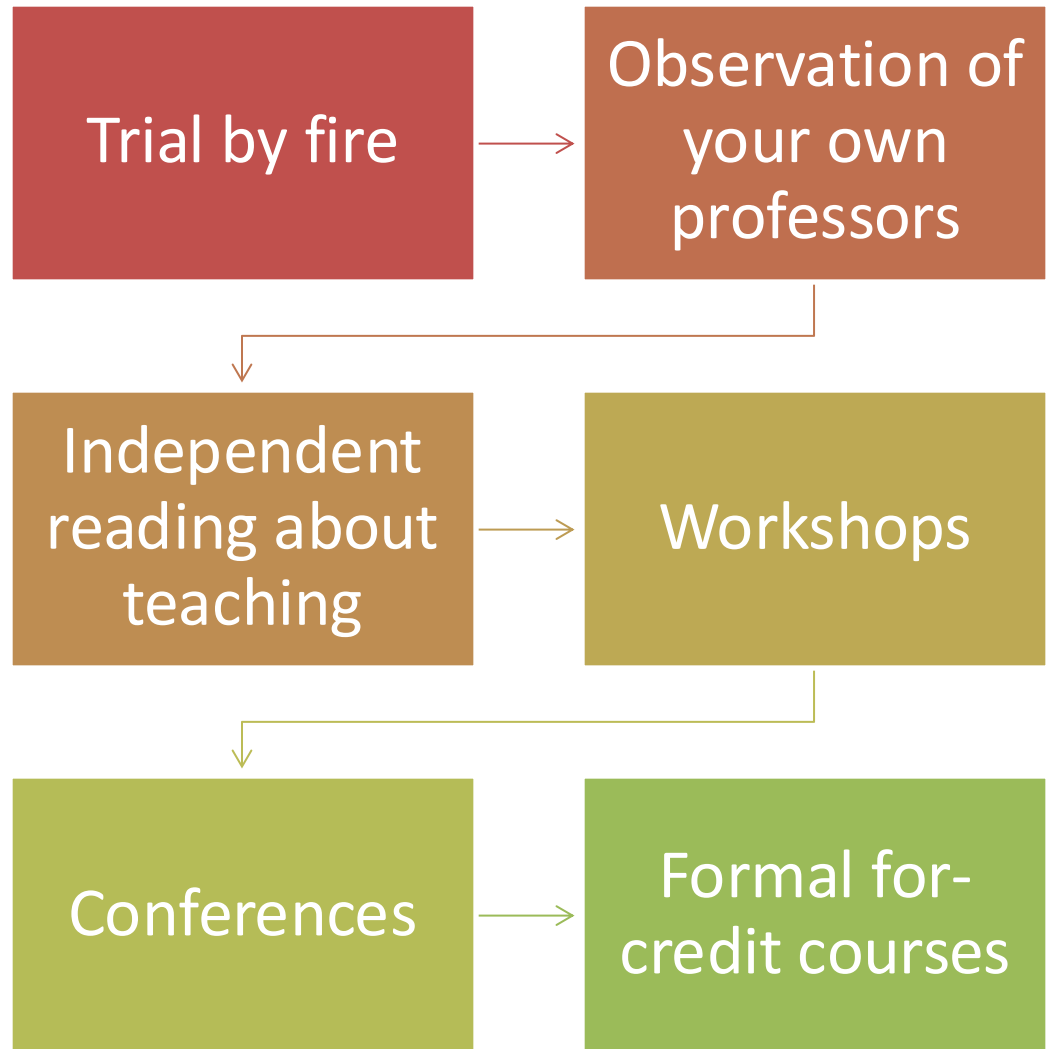


Teachers have to  
develop PCK

How did  
you learn  
to teach?



# Common Responses





**BE INTENTIONAL**

# Propositions recap

1

- Teaching is complex

2

- Good teaching requires specialized knowledge

3

- Instructors should intentionally develop TPCK



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**1**

**Argument**

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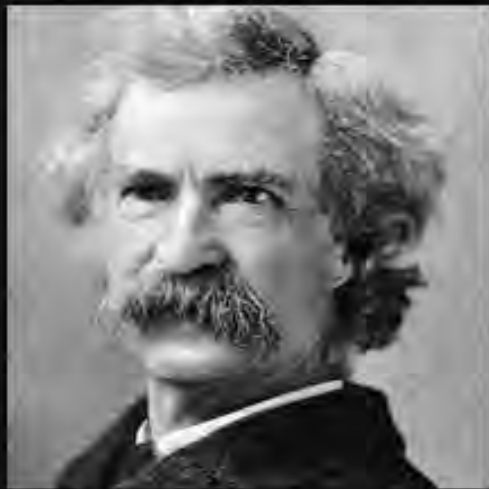
# Research on teaching



There is  
good  
research  
on  
teaching



# Challenges



All generalizations are false,  
including this one.

~ Mark Twain





Argument  
and  
Caveat  
Recap

1

Social science research on teaching and learning can inform our thinking



2

But we have to think critically about findings and whether what “works” will work in different/our contexts



What does the evidence  
tell us about what works in online  
and blended courses?

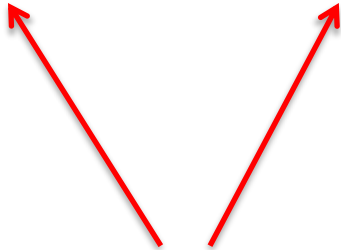




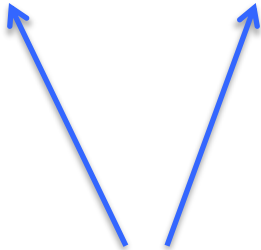
## Review Criteria

- Research report
- Peer reviewed
- Last 20 years
- Experimental/  
quasi  
experimental

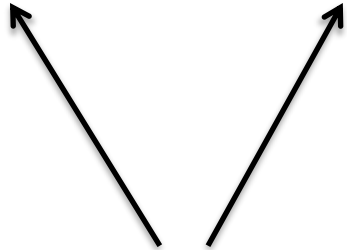
# Evidence-based principles for high-impact instructional practice



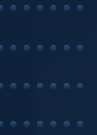
Supported by  
experimental or  
quasi experimental  
studies



Shows significant  
effect on outcomes



Is intentional  
practice by  
instructor



“What works” quiz:

# Question 1

Some class preparation activities are associated with a documented gain in learning outcomes, while others are not shown to produce much effect. Which of the following class preparation activities has been shown to improve learning?

- a. Highlighting/underlining
- b. Re-reading
- c. Guided reading questions

## Question 2

Some activities bridge prior knowledge to new information and lead to improved learning outcomes. Which of the following prior knowledge activation methods has not been shown to improve learning?

- a. Students summarizing their own prior knowledge
- b. Students explaining why something is true
- c. Students explaining how new information is related to old information

# Question 3

Explicit instruction can improve student learning. However, some direct approaches can actually detract from learning. Which of the following direct instruction methods has not been shown to improve student learning?

- a. Clear goals
- b. High level of details
- c. Scaffolded examples

# Question 4

- Students can be distracted during learning, yet an instructor's deliberate attempts to help students focus and attend can improve learning outcomes. Which of the following methods to help student attention and focus has been shown to improve student learning outcomes?
  - a. Posting full sets of lecture notes online ahead of the lecture
  - b. Offering students partial notes to complete during a learning activity
  - c. Allowing students to take notes on a laptop

# Question 5

- Selecting instructional approaches that engage students in learning can improve learning outcomes. Which of the following instructional approaches has not been shown to result in improve learning outcomes?
  - a. Active learning
  - b. Collaborative learning
  - c. Matching teaching method to student learning style



# Question 6

- Making an intentional effort to relate to students can lead to improve learning outcomes. Which of the following ways to relate to students has not been shown to lead to improved learning outcomes?
  - a. Having an extroverted personality
  - b. Being expressive in class
  - c. Being available to students outside of class


# Question 7

- When used wisely, assessment can improve learning. Which one of the following assessment approaches has not been shown to be related to improved learning?
  - a. Frequent quizzes
  - b. High stakes exams
  - c. Constructive alignment of outcomes and assessments

---

So what does  
research say about  
online and blended  
courses?

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No significant  
different  
phenomenon

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The background of the slide is a dark blue, semi-transparent image of a person sitting at a desk with a computer. The person is looking at the screen. Overlaid on this image are several faint, light blue dotted circles and lines, suggesting a design or instructional theme.

Instructional design is key

7 evidence-based principles  
(grounded in instructional  
design) for high-impact  
instructional practice in  
online and blended courses



—

Principle 1.  
Guide  
student  
independent  
prep work

---



# SCHEMA





# Read the following paragraph

- By Bransford and Johnson (1972)

## SCHEMA



- The procedure is actually quite simple. First you arrange items into different groups. Of course one pile may be sufficient depending on how much there is to do. If you have to go somewhere else due to lack of facilities that is the next step; otherwise, you are pretty well set. It is important not to overdo things. That is, it is better to do too few things at once than too many. In the short run this may not seem important but complications can easily arise. A mistake can be expensive as well.

- At first, the whole procedure will seem complicated. Soon, however, it will become just another facet of life. It is difficult to foresee any end to the necessity for this task in the immediate future, but then, one can never tell. After the procedure is completed one arranges the materials into different groups again. Then they can be put into their appropriate places. Eventually they will be used once more and the whole cycle will then have to be repeated. However, this is part of life.

What was the passage about?

# Washing clothes

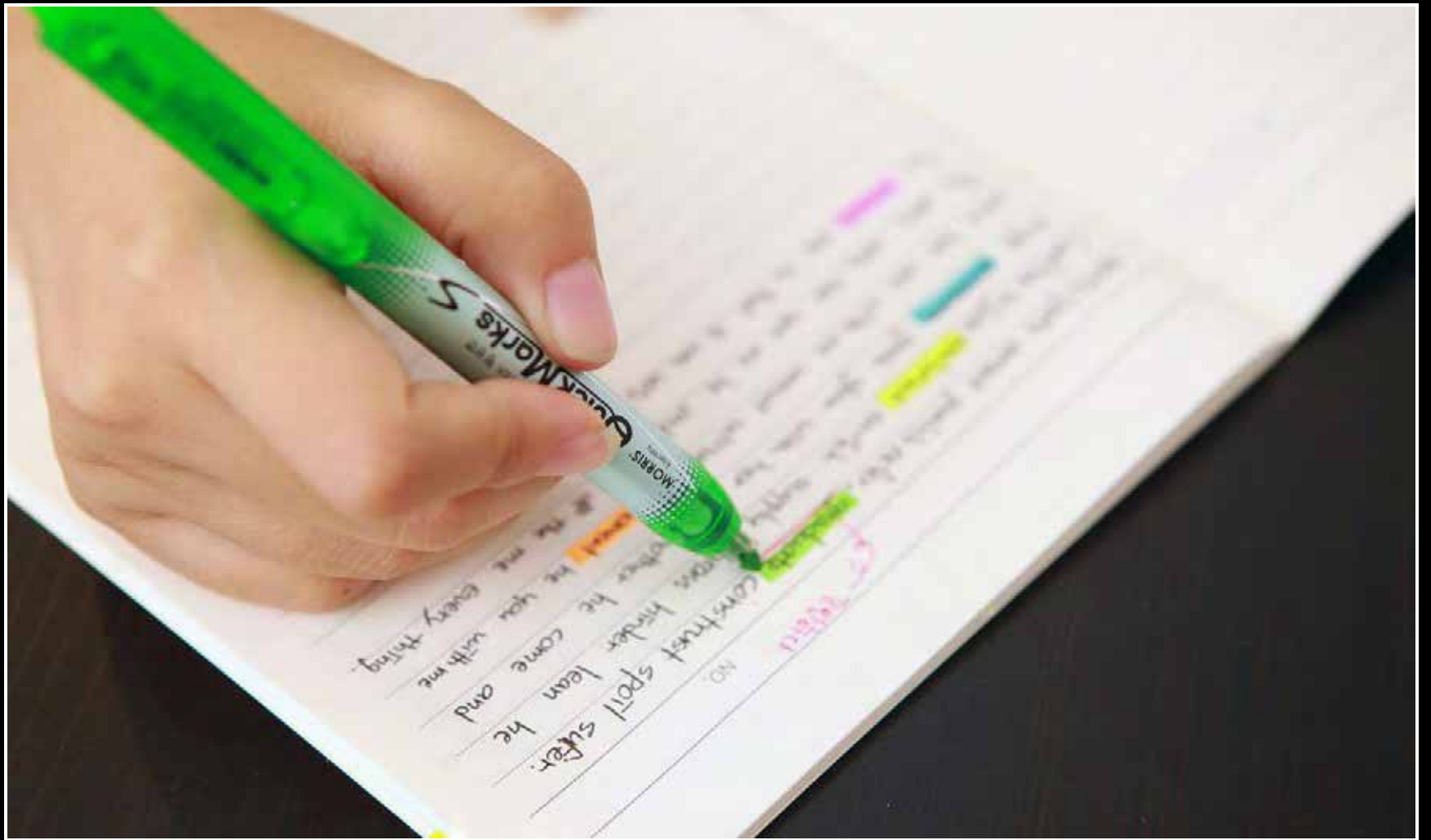


# Comprehension and Recall for Washing Clothes Paragraph

- Comprehension Ratings
  - No Topic: 32.71
  - Topic Before: 64.28
  - Topic After: 30.28
- % Idea Units Recalled
  - No Topic: 15.67
  - Topic Before: 32.38
  - Topic After: 14.72

Not confirmed





Highlights and underlines



Passage  
re-reading



# Confirmed



Teaching Technique 11

# Active Reading Documents

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Active Reading Documents

The background of the top section is a blurred image of hands holding together several interlocking puzzle pieces. The colors are muted, with shades of blue, purple, and pink. The text is overlaid on this image.

Teaching Technique 34

 **Invent the Quiz**

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**CROSS**  
ACADEMY

Student-developed  
Questions

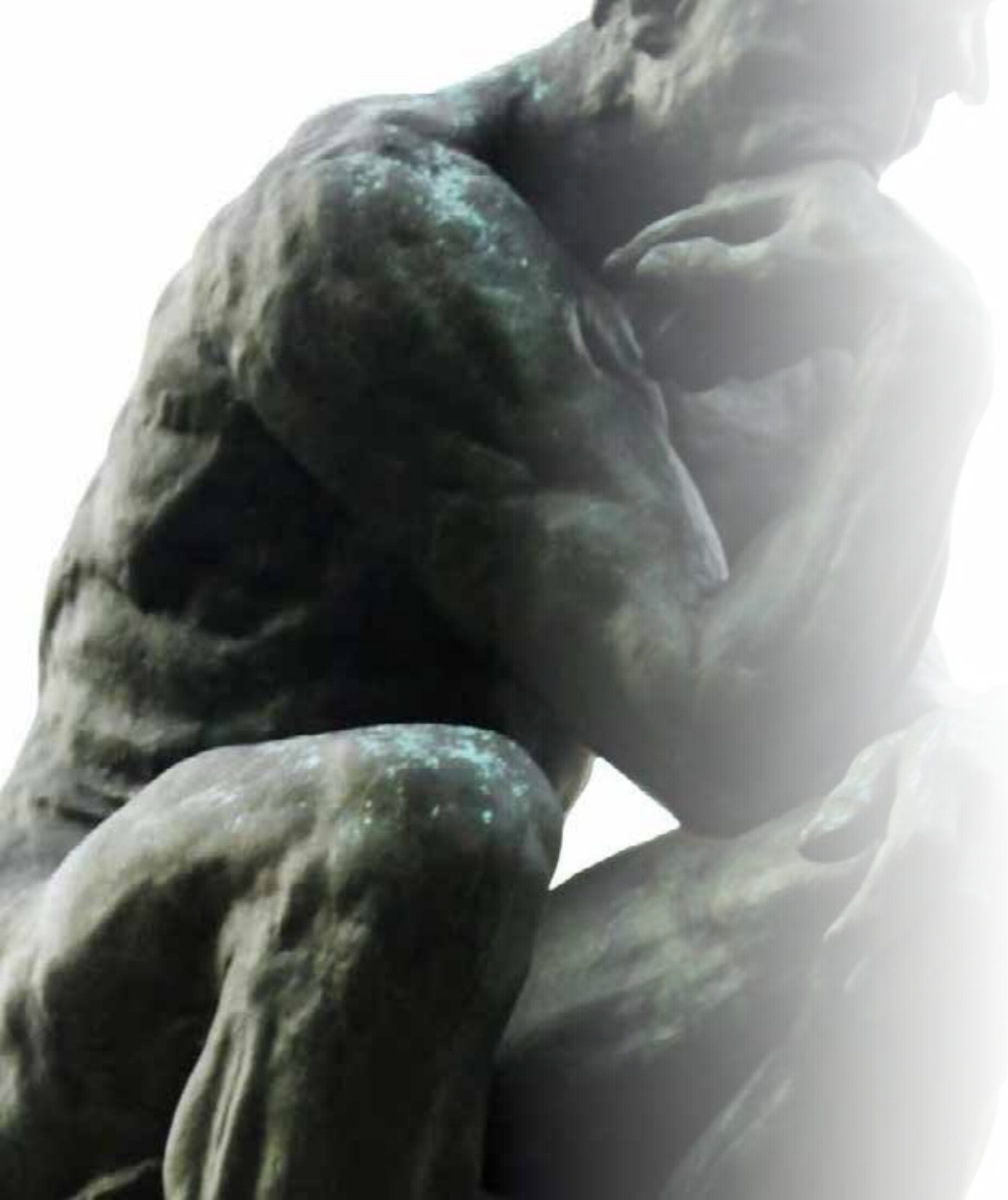
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# Principle 1. Guide student independent prep work

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Take a note: What activity could work for you?



Principle 2.  
Ask students to  
relate prior  
knowledge to  
new information  
to come

---





Quick demonstration

Help them  
connect

---

**Here's what we are going to do:**

---

Create a numbered list: 1-20.

---

I read a set of words to you.

---

You write “yes” or “no” in response to your prompt.

---

Do NOT write the word down, simply yes or no.



---

## Here's what we are going to do:

---

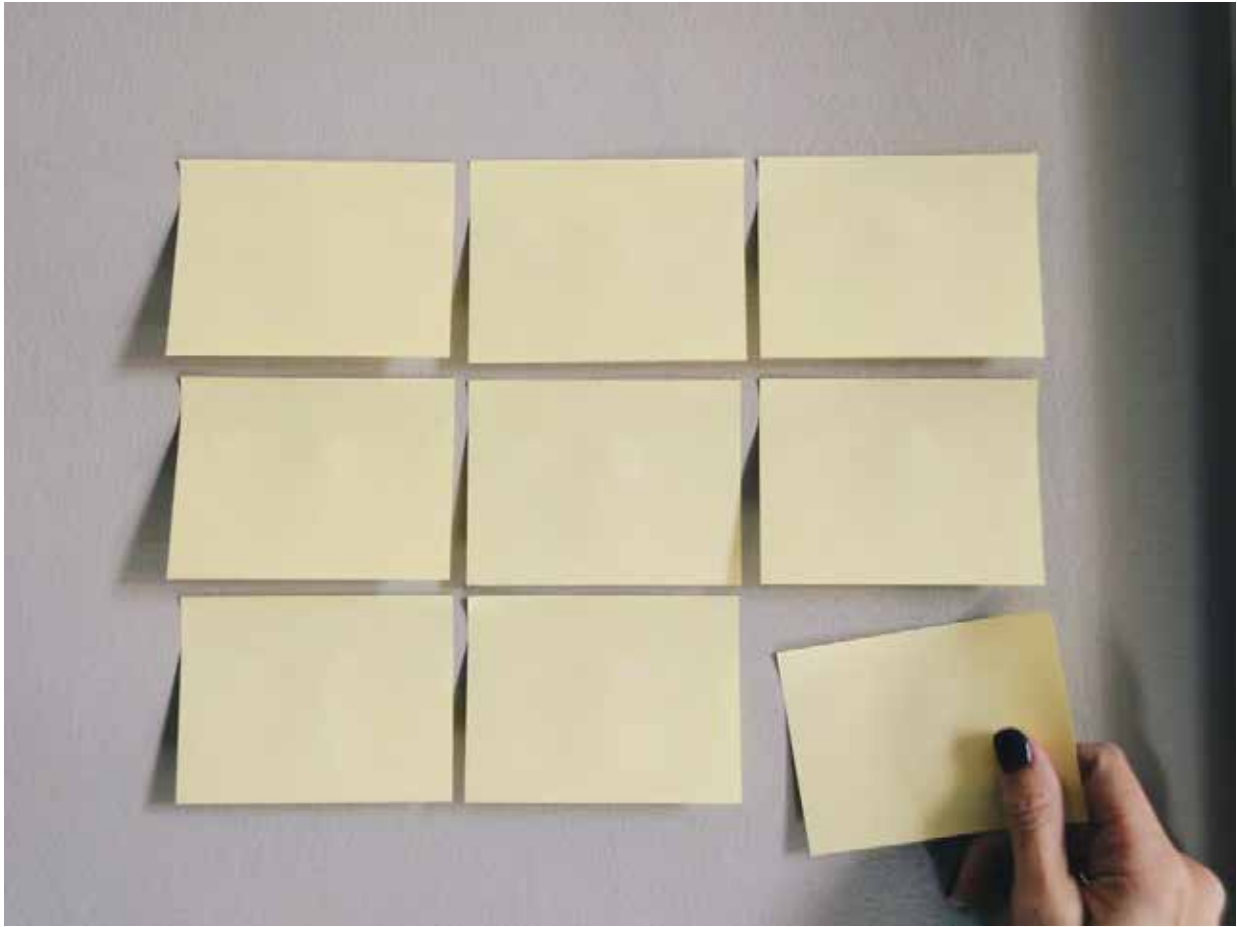
Last name A-K (group 1).

Write “yes” if the word has the letter E in it, and “no” if it does not.

---

Last name J-Z (group 2):

write yes if the word sounds pleasant to you and no if the word does not sound pleasant to you.



Now:  
write  
down the  
words you  
remember



How many  
words did  
you recall?

Group 1?

Group 2?

1. table
2. night
3. red
4. love
5. salt
6. happy
7. north
8. mother
9. high
10. odd
11. hate
12. father
13. day
14. green
15. even
16. chair
17. pepper
18. low
19. sad
20. south

Not confirmed





# summary

An overview of content that provides a reader with the overarching theme, but does not expand on specific details. A ...

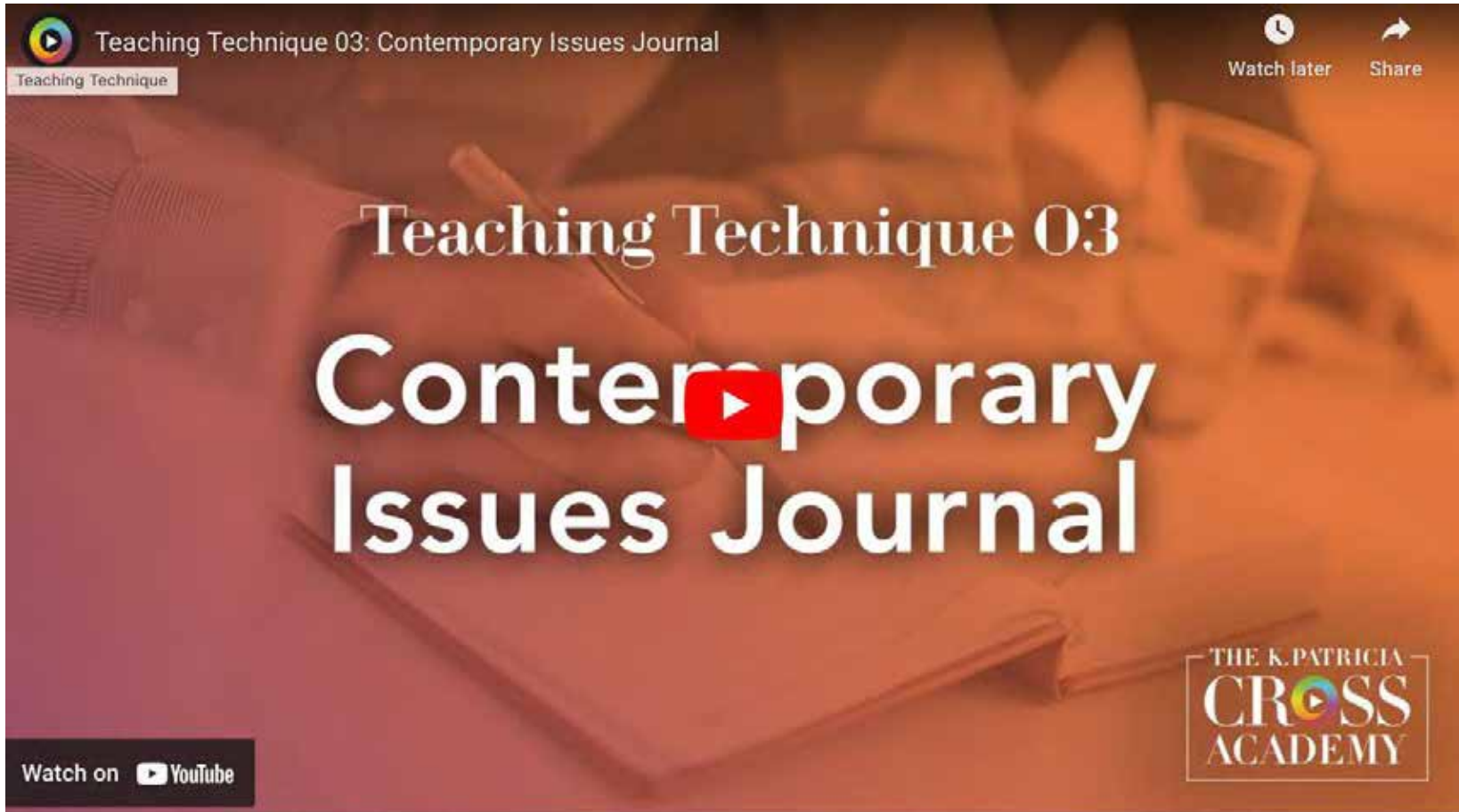


BusinessDictionary

Stating/summarizing prior knowledge

# Confirmed





Connecting new information to their  
lives

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Teaching Technique 18: Support a Statement

Teaching Technique



Watch later

S

# Teaching Technique 18

# Support a Statement

Watch on  YouTube

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Connecting to content

## Teaching Technique 50

# Sentence Stem Predictions



Making predictions

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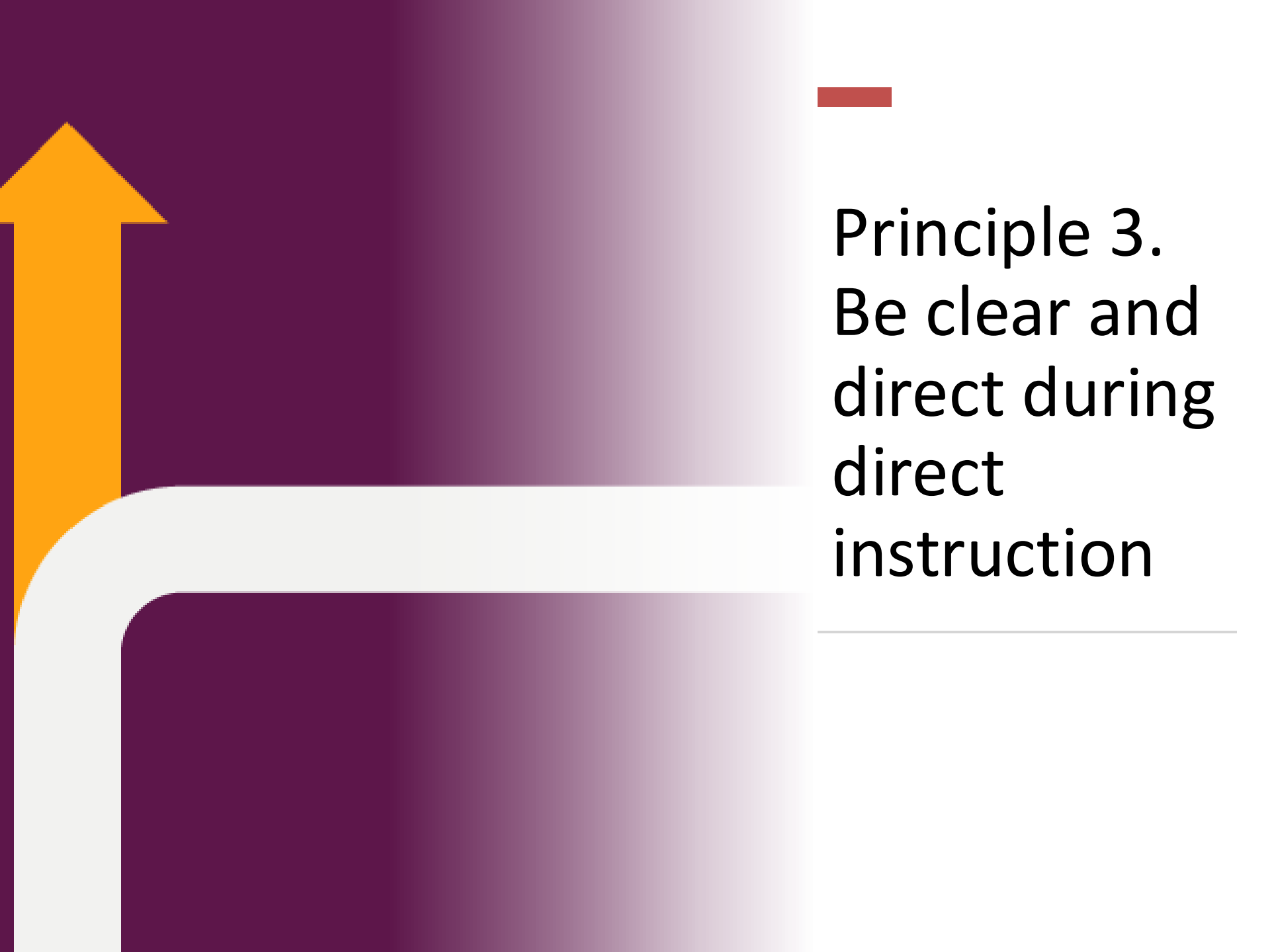


## Principle 2.

Ask students to relate prior knowledge to new information to come

---

Take a note: What activity could work for you?



Principle 3.  
Be clear and  
direct during  
direct  
instruction

Not confirmed





# Extraneous details in lectures (including video lectures!)



# Slide decks (but they like them)



49



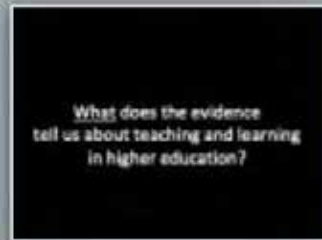
50



51



52



67



58



59



60



65



66



67



68

# Confirmed

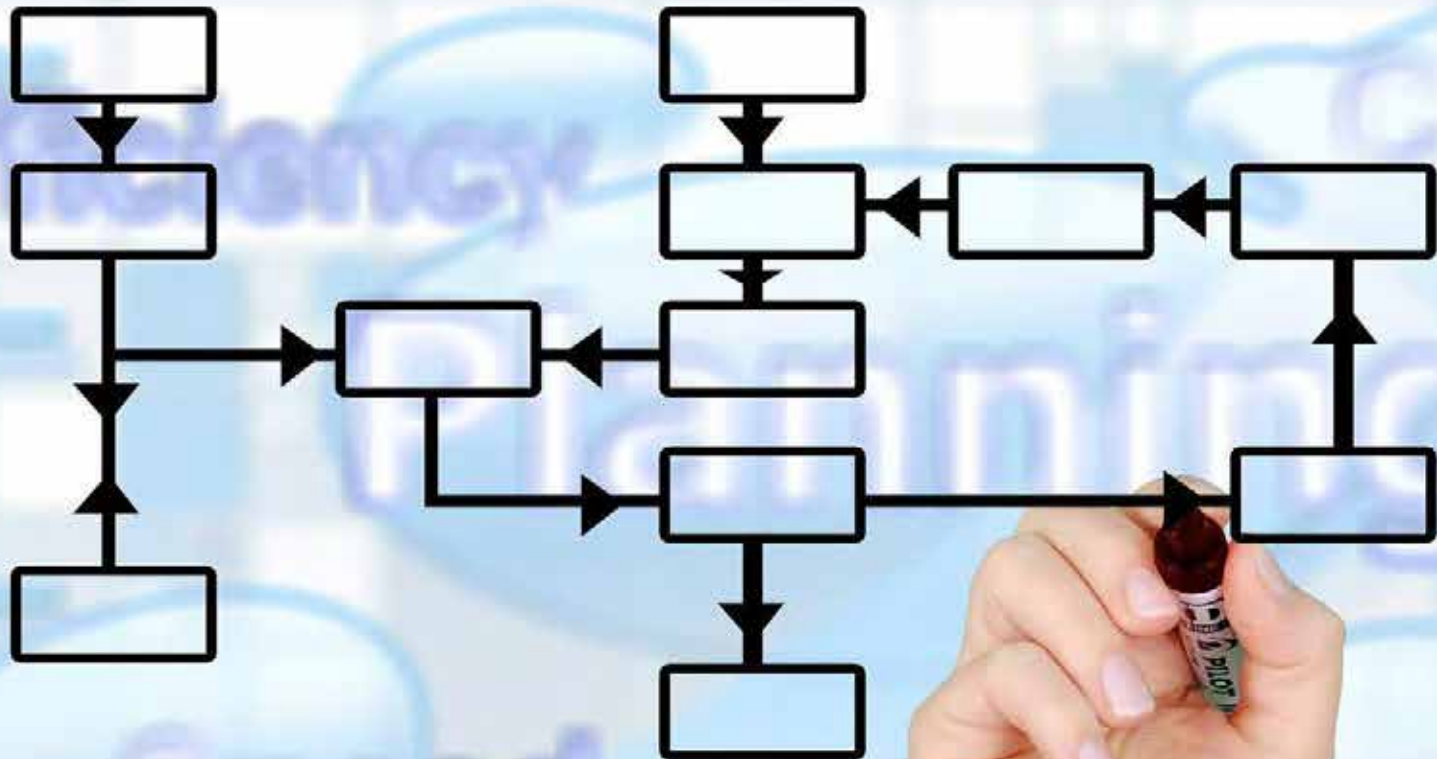




A few clear goals



# Explicit organization



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# Chunking

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Chunk difficult  
content for  
them

Read the following  
letters (Don't write)

(you will have about 3 seconds  
to read)

WH OIB MES LUS A

From memory,  
write down (or type out)  
the letters you saw

Read the following  
letters (Don't write)

(you will have about 3 seconds to read)




WHO IBM ESL USA

From memory,  
write down (or type out)  
the letters you saw

On which sequence  
were you most correct?

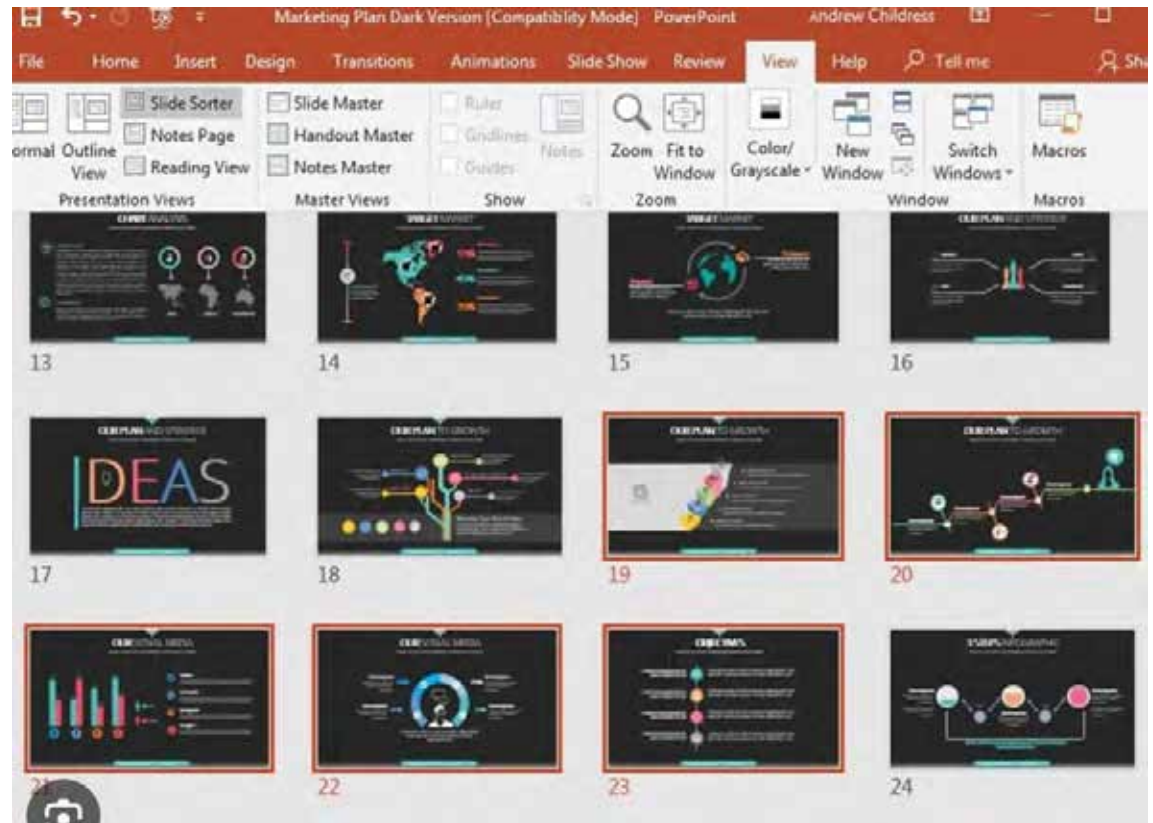
WH OIB MES LUS A

WHO IBM ESL USA



Chunking difficult content  
can help improve student  
learning

Not  
terrible  
slide decks



# The original slide projector



What a slide used to look like







# The new slide projector



What a slide looks like today

# The Pyramids in Egypt

- The Egyptian pyramids are ancient pyramid-shaped masonry structures located in Egypt.
- As of November 2008, sources cite either 118 or 138 as the number of identified Egyptian pyramids.
- Most were built as tombs for the country's pharaohs and their consorts during the Old and Middle Kingdom periods.
- The earliest known Egyptian pyramids are found at Saqqara, northwest of Memphis.
- The earliest among these is the Pyramid of Djoser, which was built c. 2630–2610 BC during the Third Dynasty.
- This pyramid and its surrounding complex were designed by the architect Imhotep, and are generally considered to be the world's oldest monumental structures constructed of dressed masonry.
- The most famous Egyptian pyramids are those found at Giza, on the outskirts of Cairo. Several of the Giza pyramids are counted among the largest structures ever built.
- The Pyramid of Khufu at Giza is the largest Egyptian pyramid. It is the only one of the Seven Wonders of the Ancient World still in existence

# Forcing students to choose a medium

- I understand that you have important content to share that students *need* to be successful.
- I understand that slides can help you stay on track; they are a great organizational tool.
- I understand that in a way powerpoint encourages lots and lots of bullets.
- I understand that most powerpoint presentations use the multi-bullet point format.
- I understand that slides can be used as guided notes.
- But, and hear me out on this one....

Slides should  
support your message

Not deliver it in full

This is about onsite  
or online lectures

But also

My Sem - Sam Houston State Drivers... Add New Post - SHSU Online Blog... MacBoard Learn logs - Google Search... MacBoard Learn

https://www.macboard.com... Latest Headlines... Patrick Rothfuss - Blog... Section Schedule Page... DRG PLANSUG - Song... 200 Ways To Get Tired...

Sam Houston State University

My Institution Courses Community Content System Admin Outcomes Internships

BIOL101

Dashboard

Add Course Blocks Customize Page

**My Announcements**

No course announcements have been posted to the last 7 days.

**What's New**

- Announcements (1)
- Blog (1)
- Discussion Board (1)
- Journals (1)

**Needs Attention**

**Alerts**

Early Warning System

- Biology 101

Activity Alerts

Control Panel Content Collection Course Tools Evaluation Grade Center Users and Groups Customization Packages and Utilities



**Activate: Engaged Teaching Beliefs Inventory (ETBI)** Ⓞ A+



Take an assessment on what you view as the most important aspects of teaching effectiveness. Refer to the Course Schedule for due dates.

---

**Apply: Profile of Admirable Individuals** Ⓞ A+



Write a description of the best professor you ever had while in college or graduate school. Refer to the Course Schedule for due dates.

---

**Create: Engaged Teaching Philosophy Statement** Ⓞ A+





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Principle 4.  
Help students  
pay attention  
and stay  
focused

---









# Quick demonstration

Help them avoid  
multitasking

When I say “start”, count to 52. When you are done, check your time and write it down.

**4:01**

When I say “start”, say the alphabet twice. When you are done, check your time and write it down.

**4:01**

When I say “start,” alternate between number and letter (1 A 2 B 3 C, etc).

When you are done, check your time and write it down.



**4:01**



How much efficiency did you lose  
when you task switched?



There is no such thing as  
multi-tasking



There is only task switching



You can lose up to 40% efficiency

Not confirmed





Content blast lecturing 50-  
75 minutes

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- Syllabus
- Lecture Notes**
- Discussion
- Assignments
- Links
- Faculty Information
- Communication
- Tools
- Library

- Course Map
- Control Panel
- Quick Unenroll
- Refresh
- Detail View

## Lecture Notes



### Instructions

With each lecture, I start out by defining the main goals of my discussion, the key points I'd like us to carry away (and which may show up in discussion, as paper topics or on exams). Key points are *italicized* and important names are in **bold**. You can click on the fig. notations to view the accompanying images.

Each lecture ends with a link to the appropriate discussion area. You may also directly access the discussions from the course menu on the left of your screen.



### Lecture Note 1

#### **The Problem of Ornament: Art Nouveau & Arts and Crafts**

Welcome to our first lecture! We start this course by looking at the formative ideas shaping early modernism in architecture and design as manifested in the Art Nouveau and Arts and Crafts movements.



### Lecture Note 2

#### **Cities on the Rise: The Skyscraper Reshapes Urban Space from Street to Sky**

A dramatic episode in architecture since the industrial revolution have been made possible with

# Posting full sets of notes for lectures

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# Confirmed





Teaching Technique 16



**Guided Notes**

THE K. PATRICIA  
**CROSS**  
ACADEMY

Active note taking



Teaching Technique 30: IRAs

Watch later Share

# Teaching Technique 30 IRAs

THE K. PATRICIA  
**CROSS**  
ACADEMY

Watch on YouTube

Reflection activities



## Principle 4. Help students pay attention and stay focused

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Take a note: What activity could work for you?



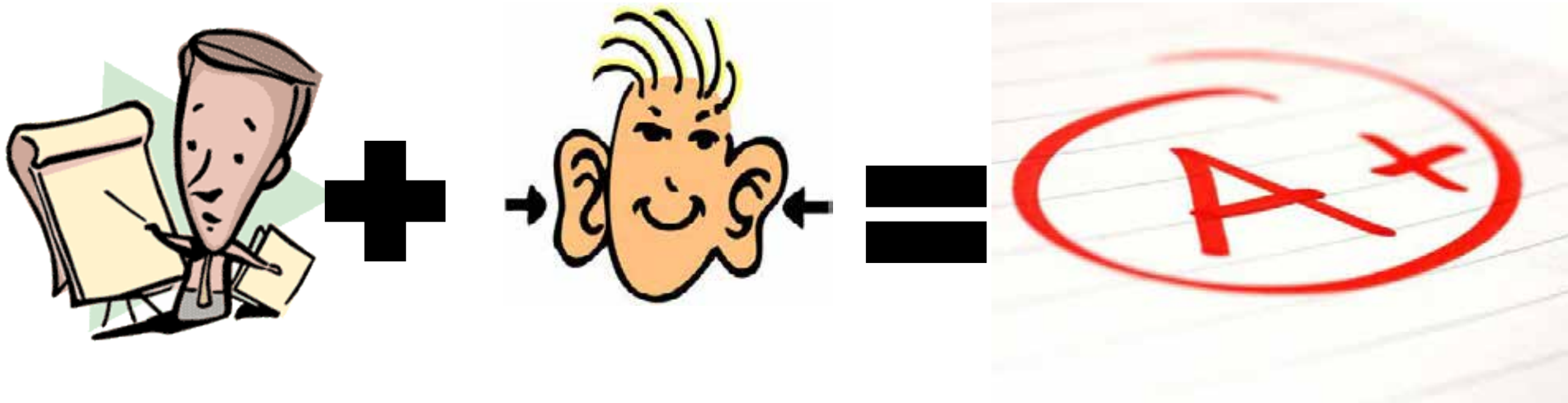
# Principle 5. Vary instructional methods

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Not confirmed




# Matching teaching method to student learning style





# Confirmed





Structured but  
Active  
Learning



# Weekly

- Activate
- Read/Quiz
- (Questions and Comments)
- Apply
- Create
- Self-Assess



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**CROSS**  
ACADEMY

<https://kpcrossacademy.org/>

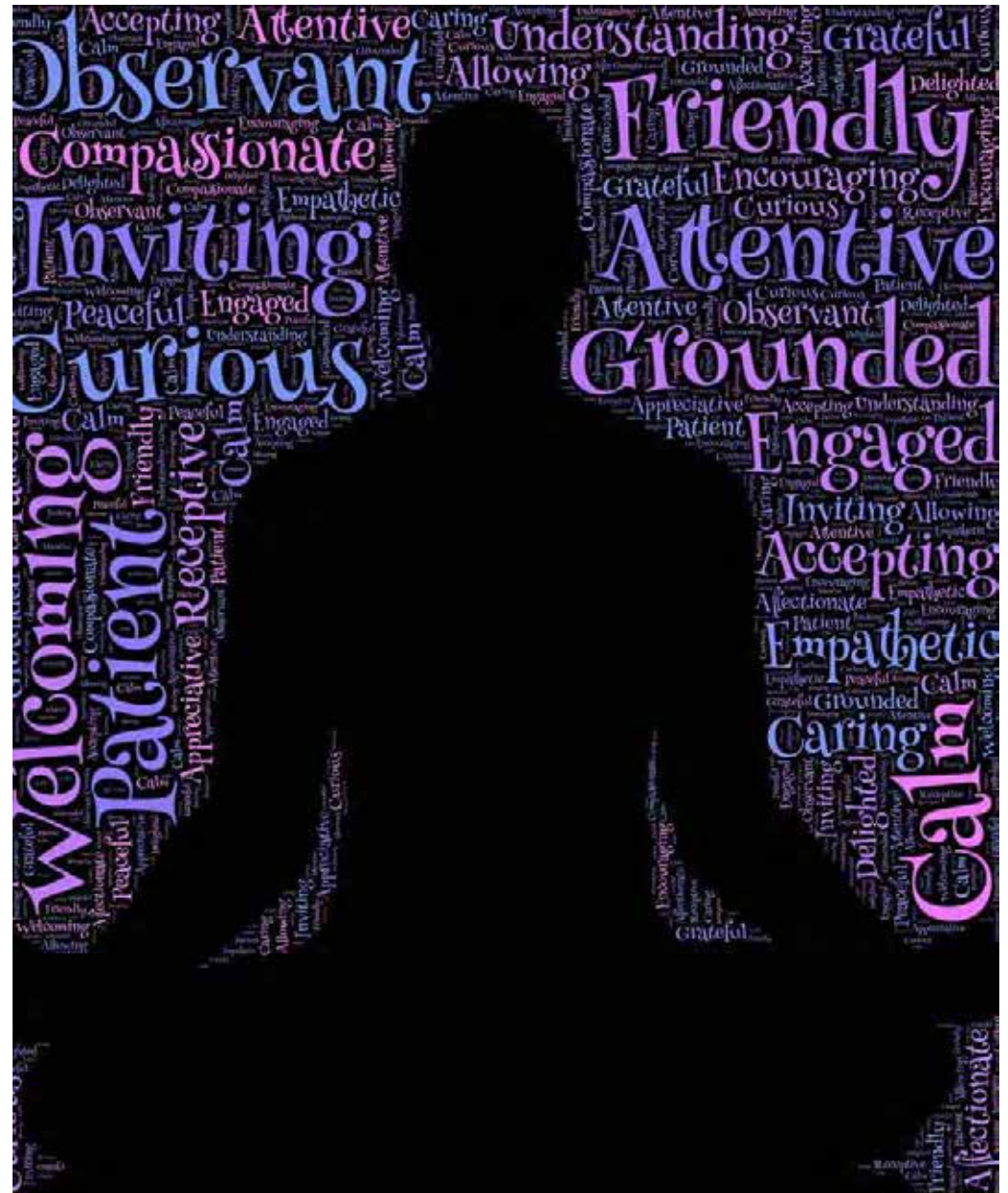


# Principle 5. Vary instructional methods

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Take a note: What activity could work for you?

Principle 6.  
Establish a  
clear  
teaching  
presence



Not confirmed





Having a  
specific  
personality/  
teaching  
style

## INTP: Prof Frink

**Type:** INTP

**Characterization:** The Engineer

**Personality:**

INTPs are logical, individualistic, reserved, and very curious individuals. They focus on ideas, theories and the explanation of how things work. They are especially adept at discussions and debate. They have the ability to focus intently on a subject. They appreciate and respect intelligence in others.



# Confirmed



## AHE 603 College and University Teaching Spring 2023

College and University Teaching is designed to help you think about teaching and learning at the college and university level. You will learn about key issues and trends and have the opportunity to develop and enhance some teaching skills as a result of your work this semester. What you gain from this course will be largely dependent upon your focus and your effort.

### COURSE INSTRUCTOR



**Dr. Claire Major**  
cmajor@ua.edu



**Dr. Paton Roden Beck**  
pmroden@crimson.ua.edu

Please use the email addresses listed above instead of emailing through the Blackboard learning management system; we will simply be more likely to see your message if you do.

# Being visible





Claire Major



I'm Claire Major, a Professor of Higher Education at the University of Alabama in Tuscaloosa, Alabama. I have extensive teaching experience in higher education. Early in my career, working as a Teaching Assistant and then adjunct faculty member, I taught more than forty sections of developmental studies English, freshman composition, and sophomore literature. During this time, I also taught across institutional types, including at a large urban community college, a two-year historically black college and university, a two-year technical institution, a public 4-year institution, and a large research institution.

After completing my Ph.D., I worked as director of a center for teaching, focused specifically on problem-based learning, at a small private four-year religious institution. My work there involved helping faculty across the university integrate innovative teaching methods into their courses. Now at the University of Alabama, I teach masters and doctoral level courses in the Higher Education Administration program. I most often teach courses on college teaching, technology in higher education, and assessment in higher education.

My research interests are in the areas of faculty work, pedagogical approaches, technology for teaching, and online learning. I also focus on issues of higher education in popular culture and higher education as a field of study. I typically draw on qualitative methods to answer my research questions. I have authored and co-authored several books, including *Student Engagement Techniques: A Handbook for College Faculty* (with Elizabeth Barkley published by Jossey-Bass), *Interactive Lecturing: A Handbook for College Faculty* (with Elizabeth Barkley published by Jossey-Bass), *Learning Assessment Techniques: A Handbook for College Faculty* (with Elizabeth Barkley published by Jossey-Bass), *Online learning: A guide to theory, research, and practice* (published by Johns Hopkins University Press), and *Collaborative learning techniques: A handbook for college faculty* (second edition, with Elizabeth Barkley and Pat Cross, published by Jossey-Bass). I have also published books on qualitative research methods. I also publish my work in leading education journals, such as *Teachers College Record*, *The Journal of Higher Education*, *Research in Higher Education*, and *Higher Education*. In addition, I present my work at national and international conferences.



## Learning Objectives: Module 1

This module is intended to help you learn to:

- Define engaged teaching
- Define effective teaching
- Describe the research on effective teaching
- List practices related to engaged and effective teaching
- Articulate your own views of college teaching



## Watch: Module 1



Click the video above for a brief introduction to this module.



# Interacting with students

202310-SS.AHE-603-910-AHE-603-911-  
AHE-603-920

1 year ago



**kc: video introductions**

<https://alabama.box.com/s/qvyq2dk8hr0tvdufqtgz0gmjmr756xb>

Reply

Edit

Delete

Email Author

▲ Hide 5 replies



**Claire Major** 🌱

1 year ago

**RE: Video Introductions**

Hi Alyssa, so nice to meet you! And congrats on being so close to graduation--I'll see you there in May! (what kind/color/size of doggo btw?). I look forward to learning with you this term!

▲ Hide 1 reply

No set it and forget it:

Check in regularly



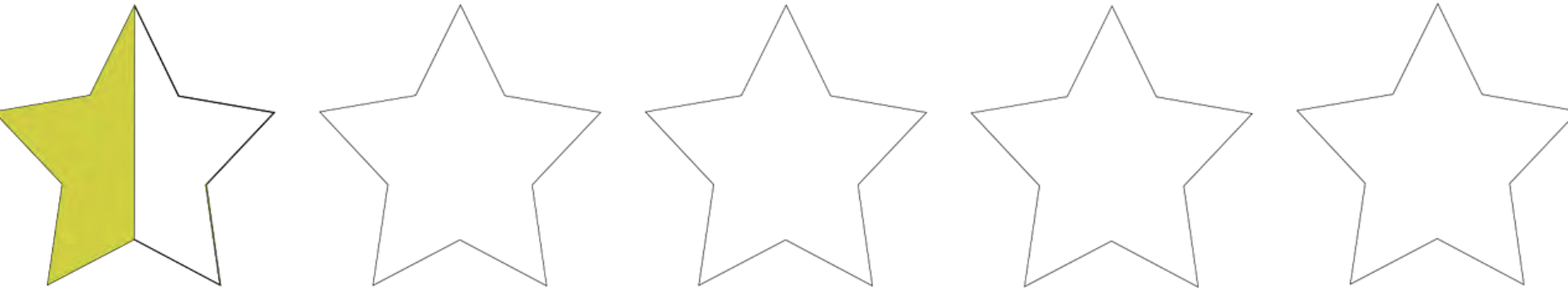
## Principle 6. Establish a clear teaching presence

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Take a note: What activity could work for you?

# Principle 7.

Use assessment as a learning tool



Not confirmed







# Infrequent high stakes testing

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# Confirmed



# Constructive alignment

Intended SLOs

What should learners know or be able to do?



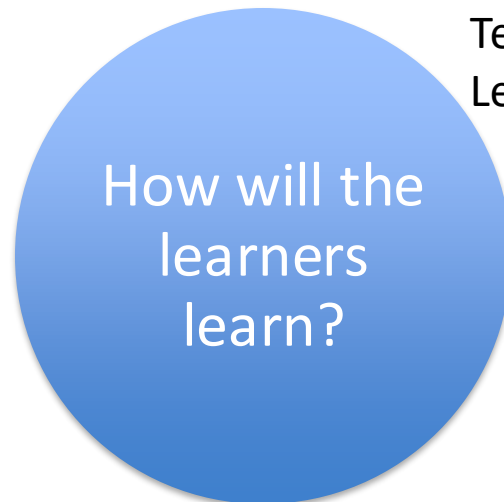
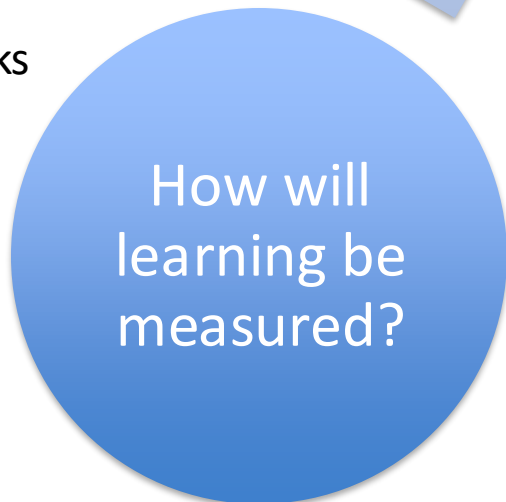
Assessment tasks

How will learning be measured?



Teaching and Learning Activities

How will the learners learn?



# QUESTIONS

1- A B C D

2- A B C D

3- A B C D

Frequent  
quizzes



## Principle 7. Use assessment as a learning tool

---

Take a note: What activity could work for you?

# Quiz results

How did you do?

# Answers

1. C

2. A

3. B

4. B

5. C

6. A

7. B

# Today I learned

What's the most useful thing from today's session for your own teaching?

Recap



Studies provide

*promising leads*

on teaching methods that

*could work*

Context Matters

Students Matter

# Discipline Matters

Teachers Matter



**GUARANTEES**

**We need to gather our own  
evidence**

---

We need to engage in assessment and the  
Scholarship of Teaching and Learning



The diagram consists of two overlapping circles. The larger circle on the left is light green and contains the word 'Content'. The smaller circle on the right is purple and contains the word 'Pedagogy'. The two circles overlap on the right side of the green circle.

**Content**

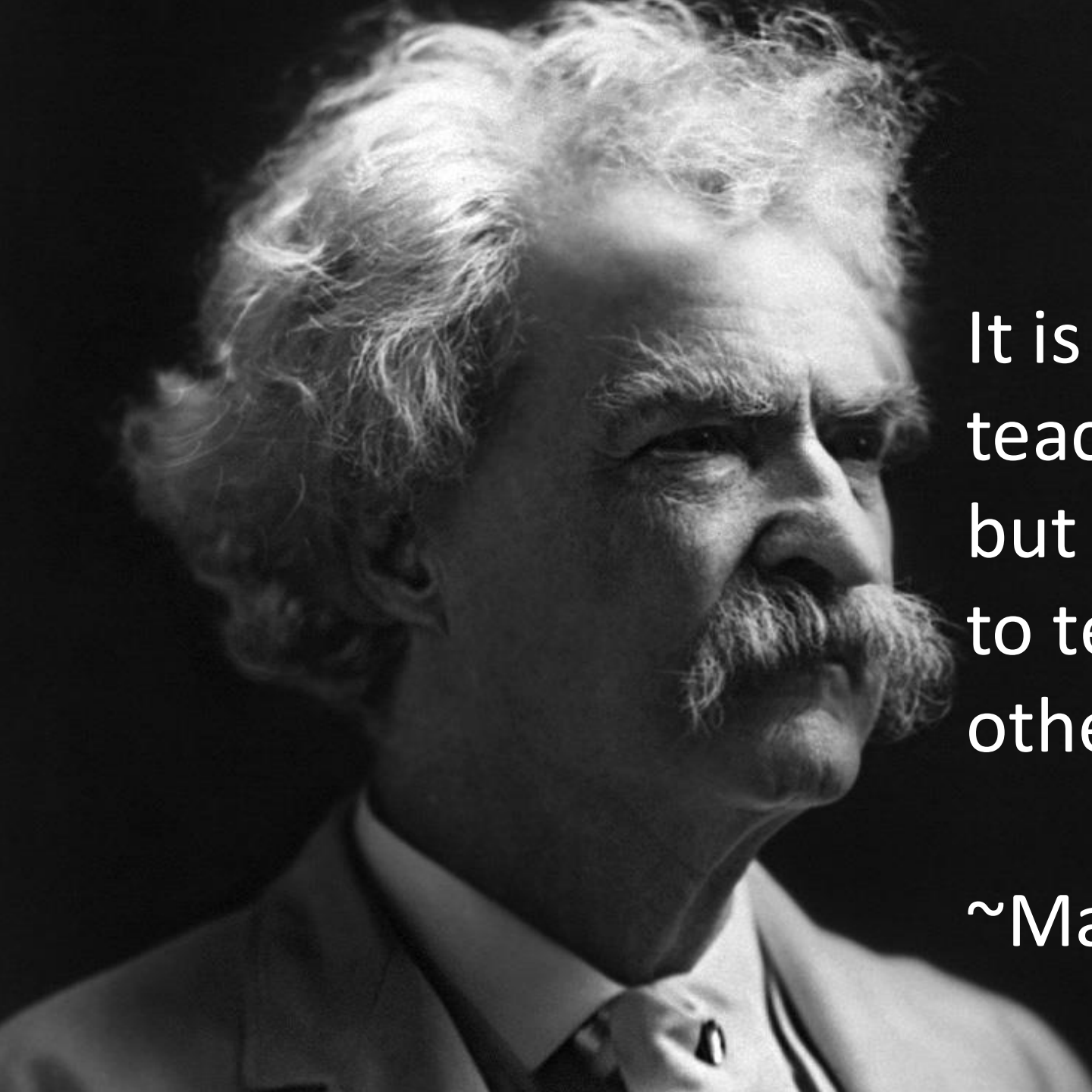
Pedagogy





**Content**

**Pedagogy**



It is noble to  
teach oneself,  
but still nobler  
to teach  
others.

~Mark Twain



Teaching for Learning: Evidence-Based  
Approaches for Online and Blended  
Learning

ETSU 2024



What questions do you have?