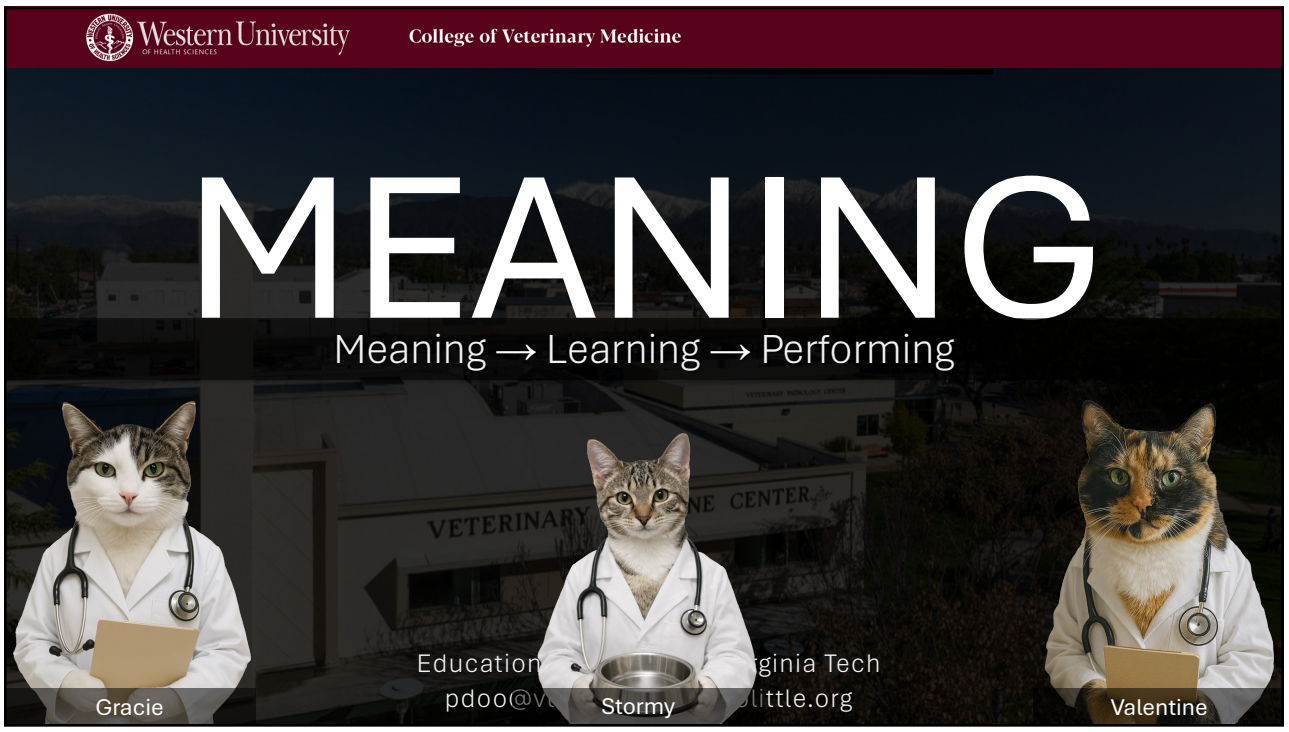
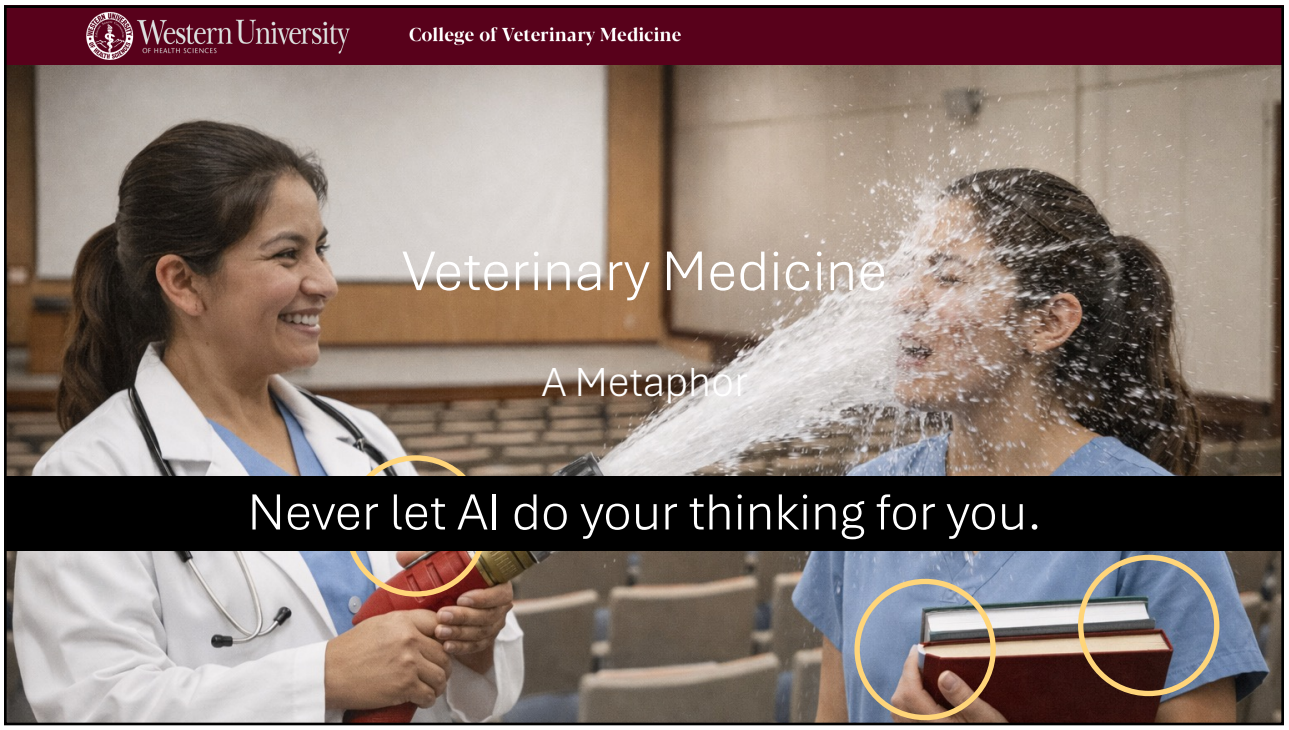
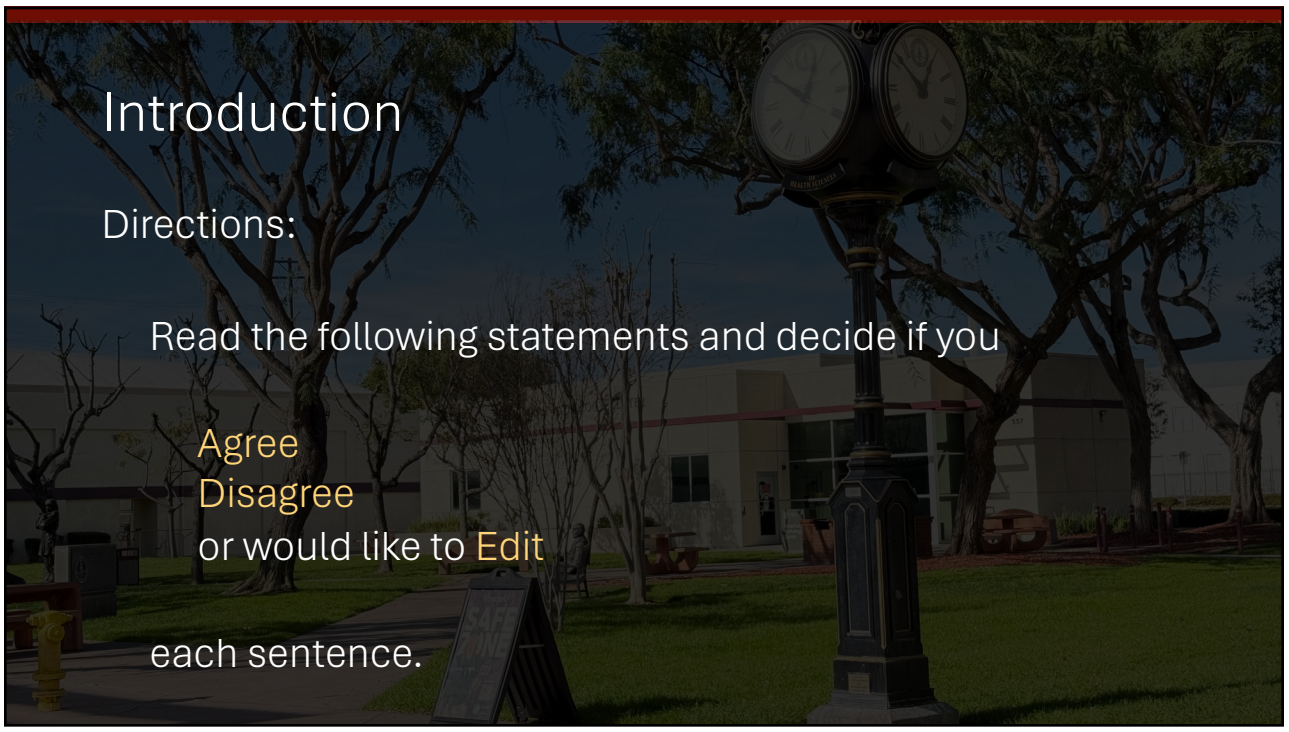

Western University
College of Veterinary Medicine
MEANING
Meaning → Learning → Performing
Gracie
Stormy
Valentine

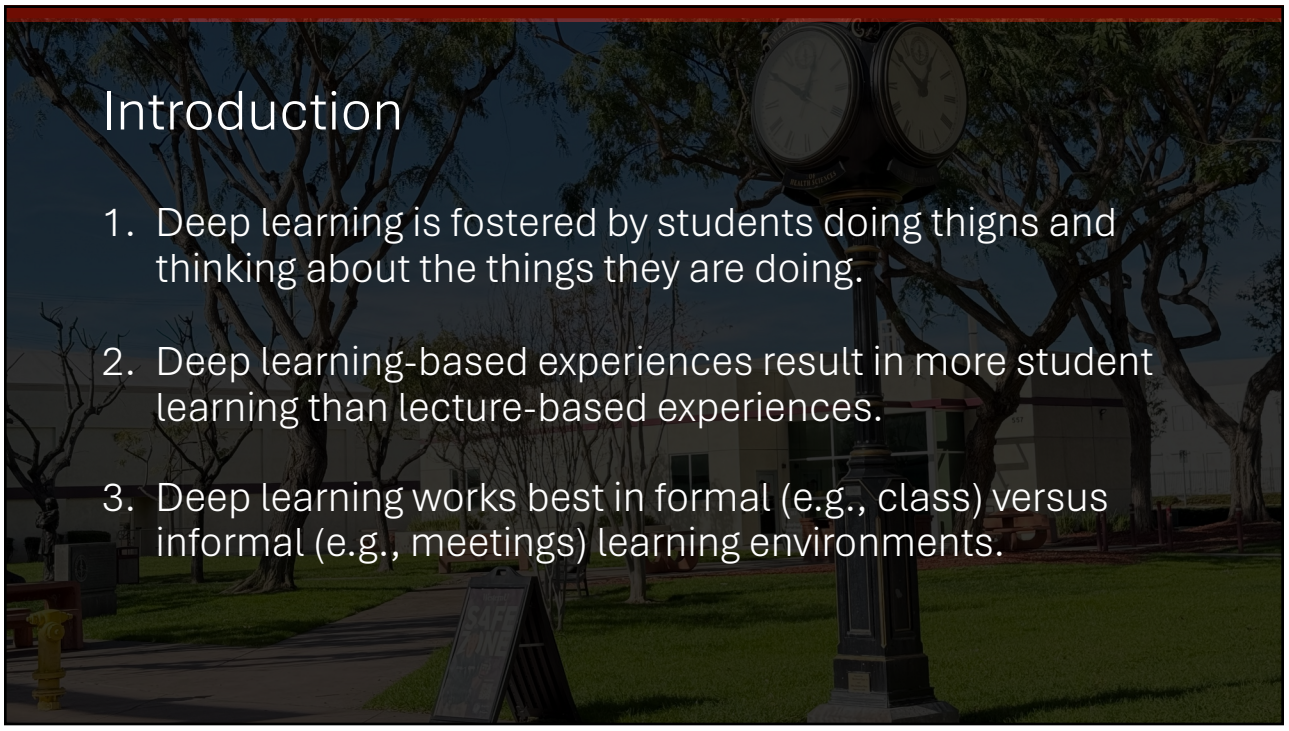
1


Western University
College of Veterinary Medicine
Veterinary Medicine
A Metaphor
Never let AI do your thinking for you.

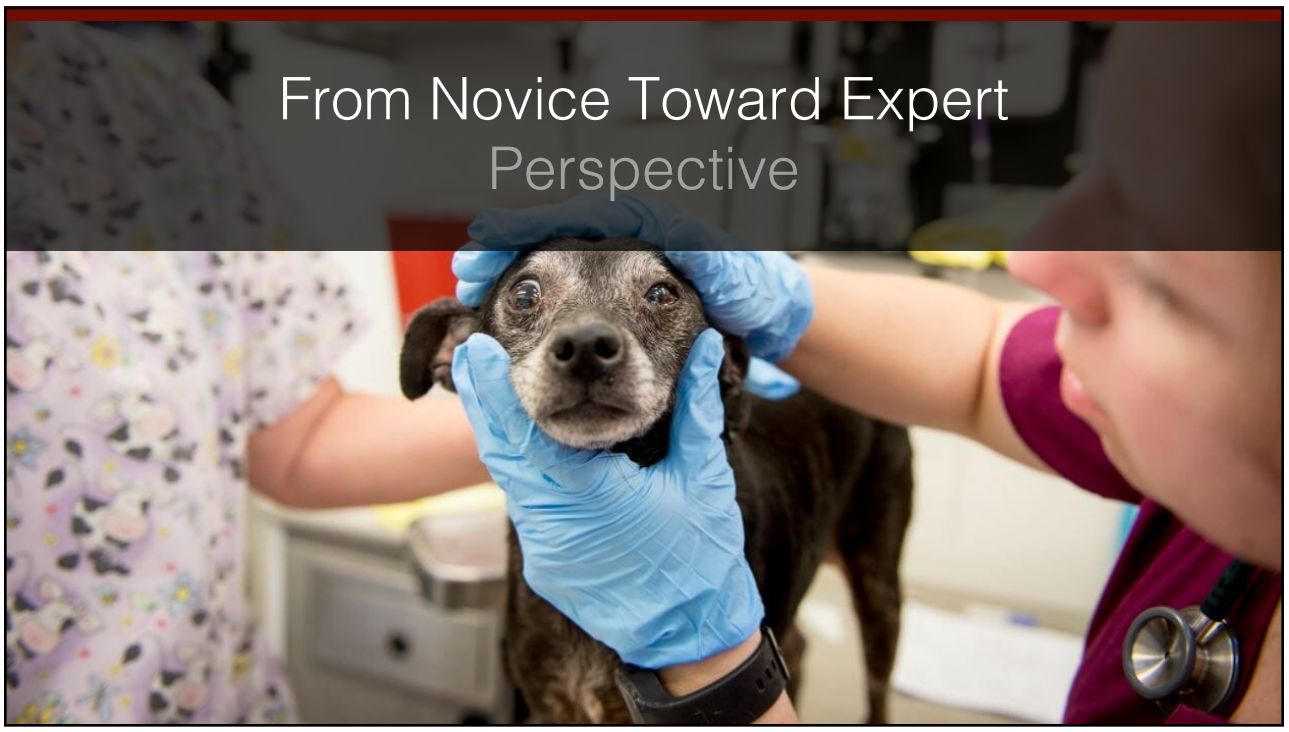
2


Introduction
Directions:
Read the following statements and decide if you
Agree
Disagree
or would like to Edit
each sentence.

3


Introduction
1. Deep learning is fostered by students doing thigns and thinking about the things they are doing.
2. Deep learning-based experiences result in more student learning than lecture-based experiences.
3. Deep learning works best in formal (e.g., class) versus informal (e.g., meetings) learning environments.

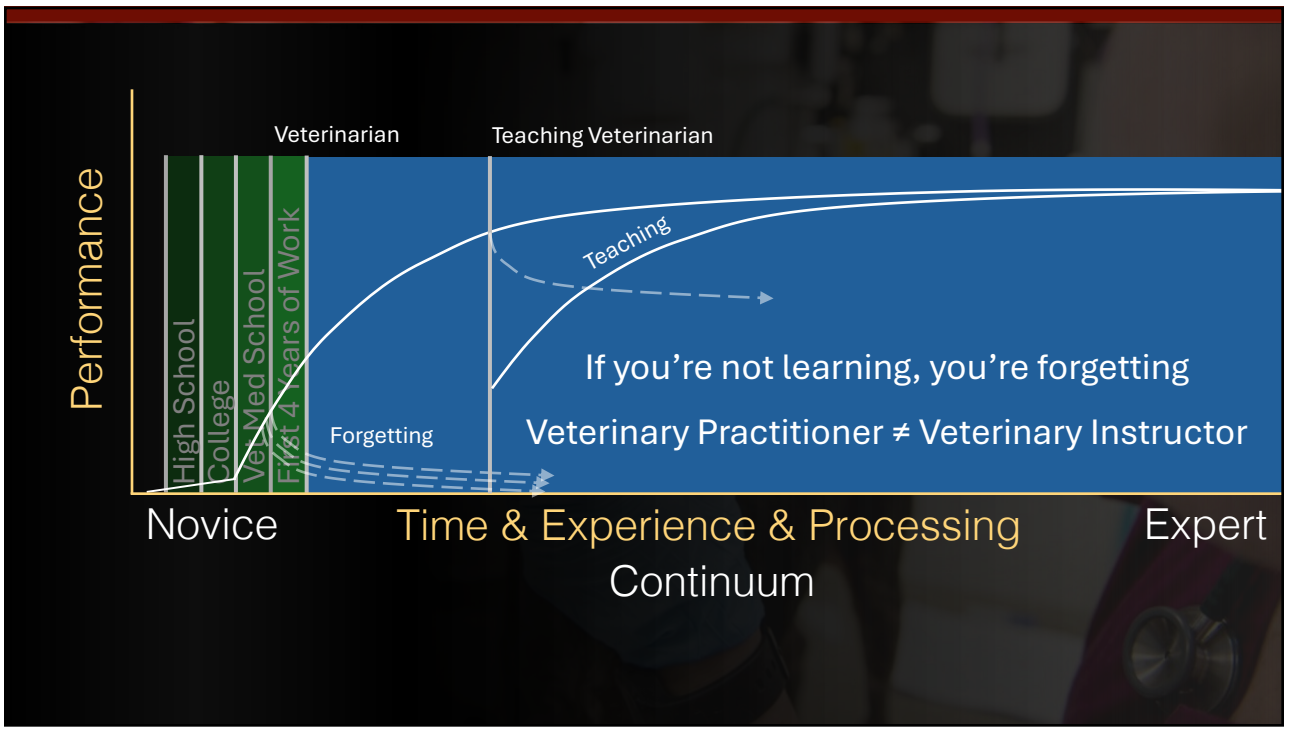
4


From Novice Toward Expert
Perspective

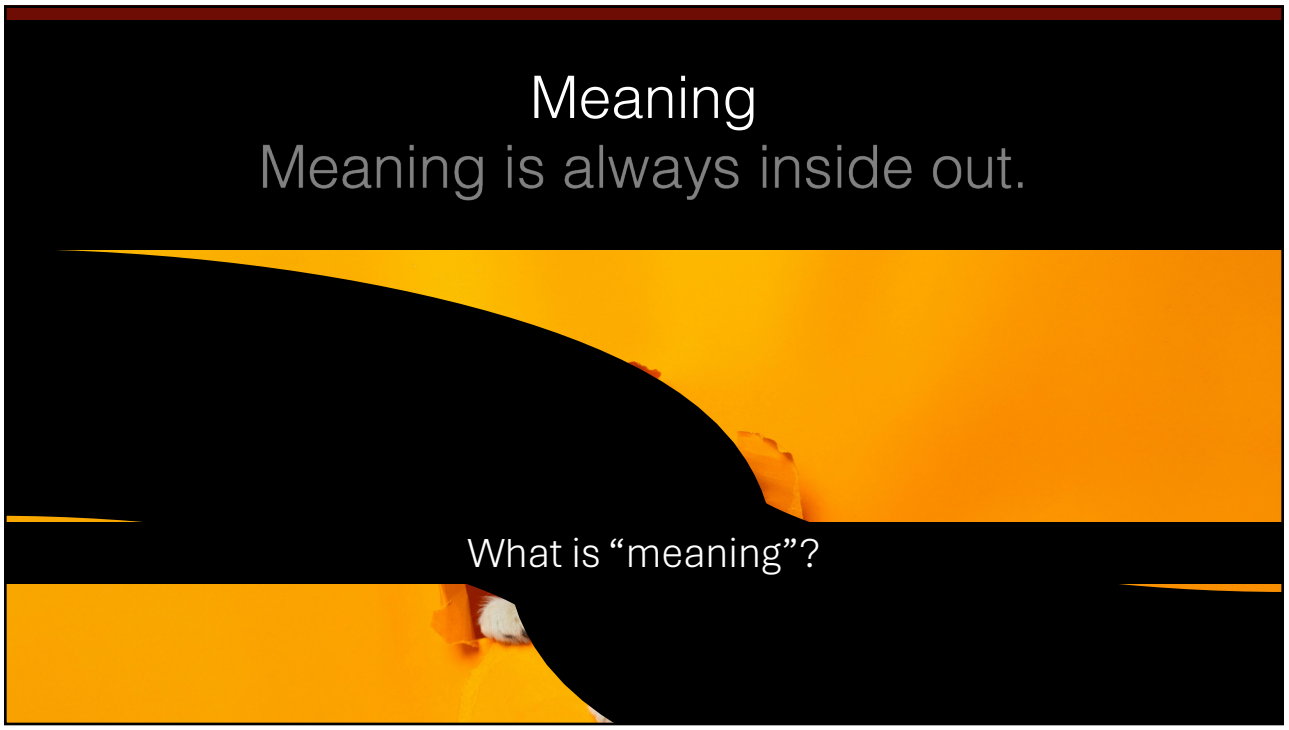
5


Performance
Novice
Time & Experience & Processing
Expert
Continuum

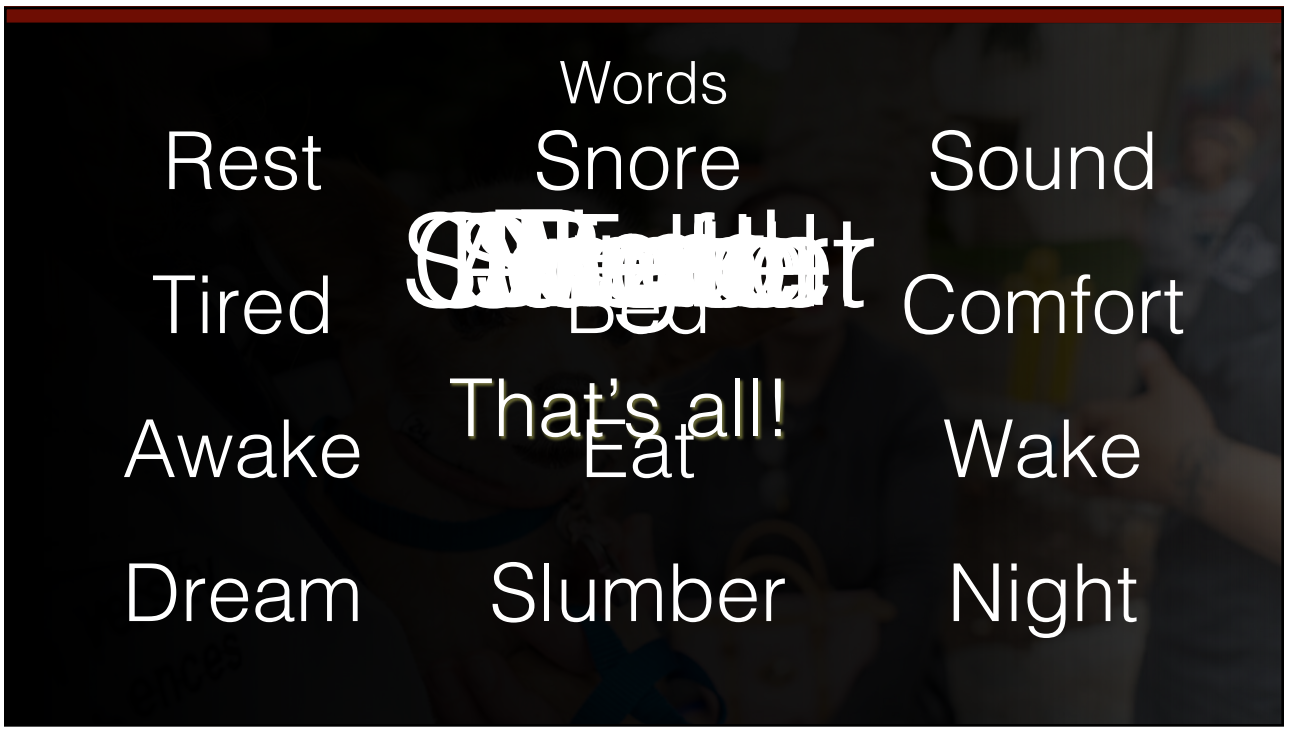
6


Performance
Veterinarian
Teaching Veterinarian
High School
College
Vet Med School
First 4 Years of Work
Teaching
Forgetting
If you're not learning, you're forgetting
Veterinary Practitioner ≠ Veterinary Instructor
Novice
Time & Experience & Processing
Continuum
Expert

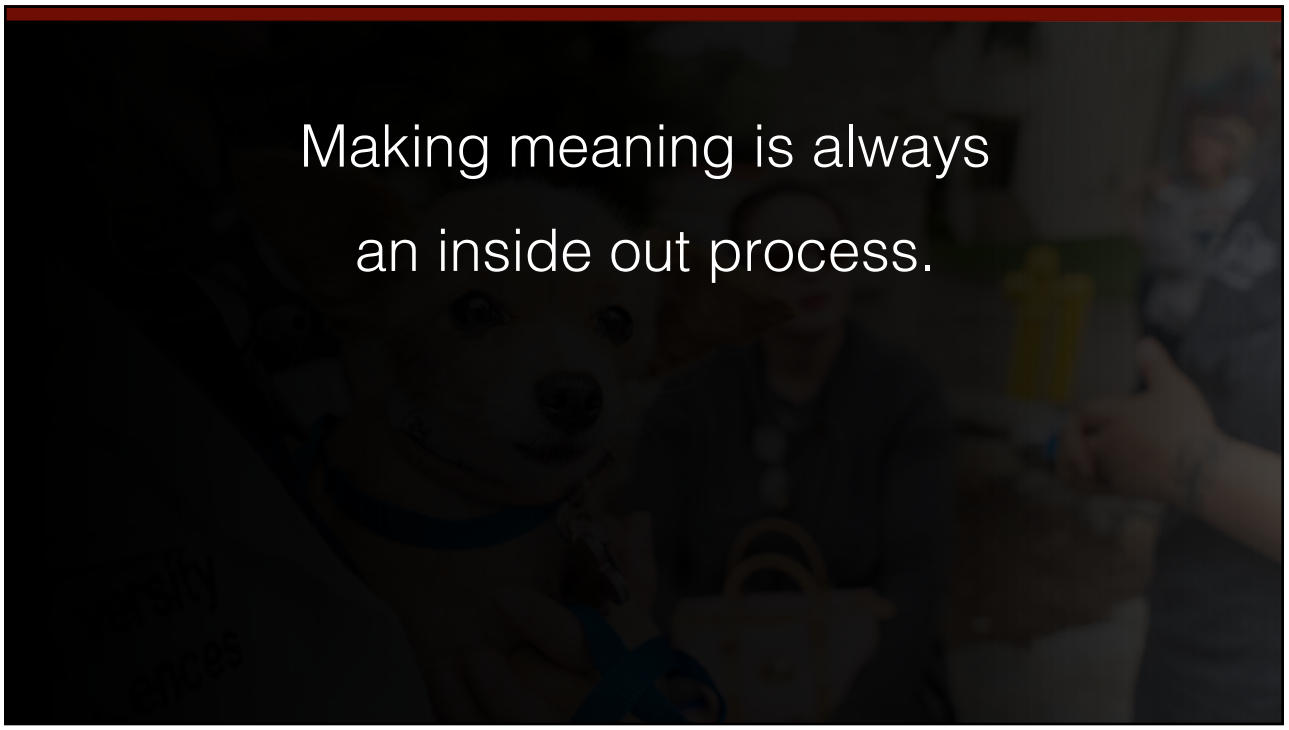
7


Meaning
Meaning is always inside out.
What is "meaning"?

8


Words
Rest
Snore
Sound
Tired
Bed
Comfort
That's all!
Awake
Eat
Wake
Dream
Slumber
Night

9


Making meaning is always
an inside out process.

10

11

Making Sense of the World

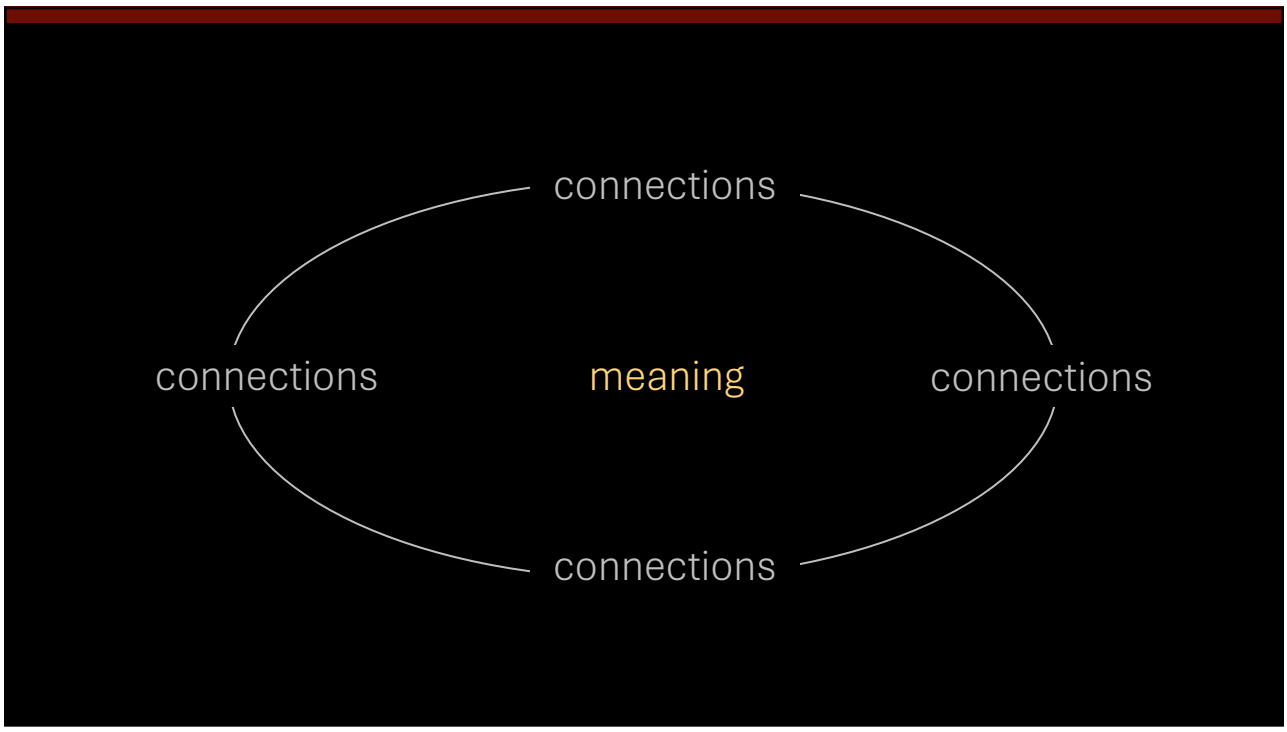
Learning is fostered when experience is meaningful.

How do you create meaning?

1. Intellectually (connecting knowledge to knowledge)
2. Personally / Culturally / Emotionally (connections)
3. Functionally / Usefully (connections)
4. Significant & Important (connections)

(Bertsch et al., 2007; Chi et al., 1981; Dunlosky et al., 2013; Rawson 2016)

12


connections
connections
meaning
connections
connections

13

14

15

Cognitive Processing for Learning

Rote Learning

Learners tend to remember information better when they

repeat information verbatim over and over, rather than elaborating on information… *but only in the short term*.

(memorization)

Elaborative Learning

Learners tend to remember information better when they

engage in deeper, more meaningful *processing*, rather than simply repeating or reviewing information verbatim.

(meaningful learning)

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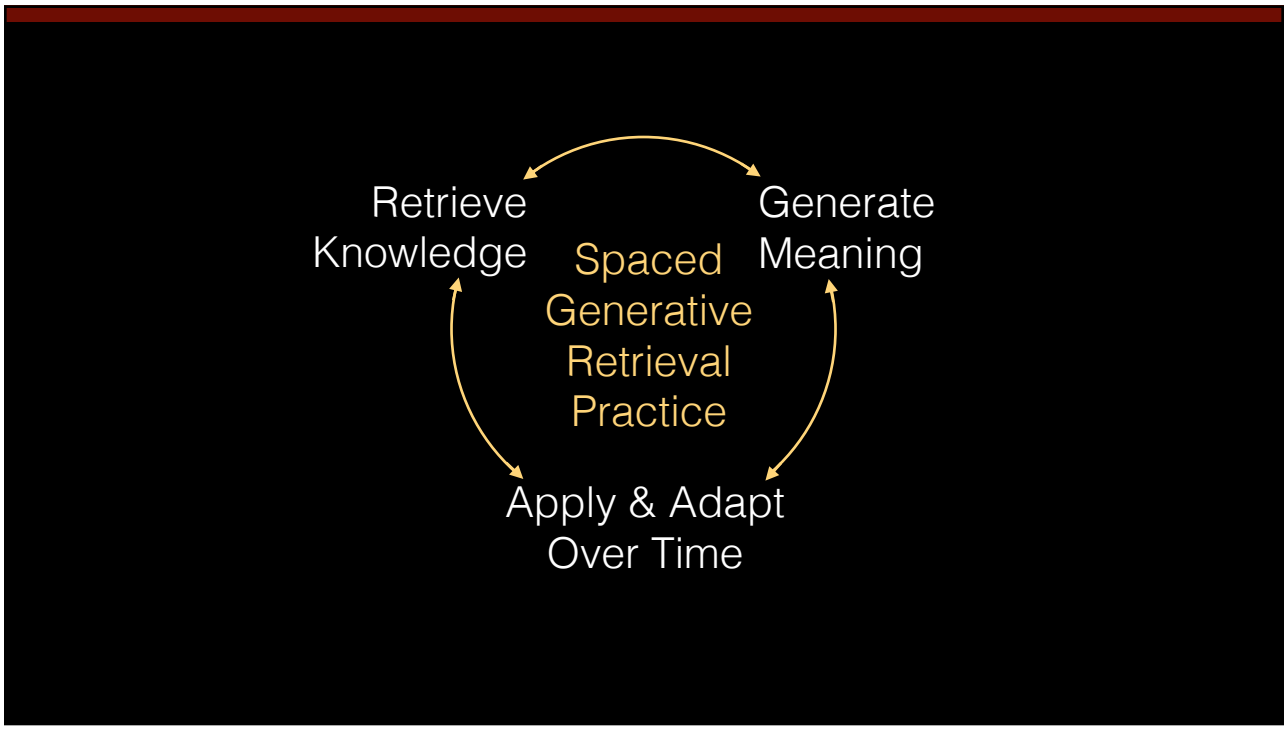
Cognitive Processing for Learning

Retrieval Effect	Spacing Effect	Generative Learning
Learners tend to remember information better when they	Learners tend to remember information better when they	Learners tend to remember information better when they
recall or retrieve information from memory, rather than simply rereading or reviewing the information.	practice retrieving the information across multiple sessions, rather than massing practice in a single session.	construct meaning by connecting new and prior knowledge, rather than reviewing or repeating information verbatim.

17



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Retrieval Practice Effect

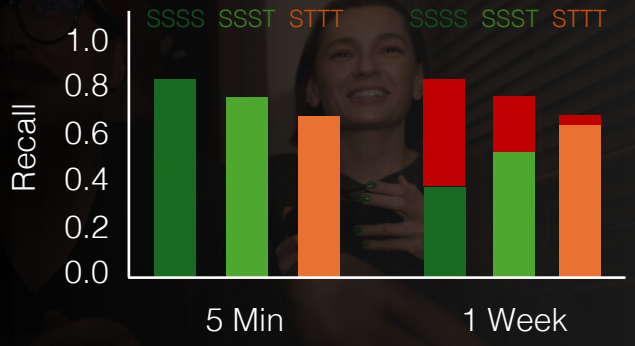
Roediger & Karpicke (2006)

- 180 undergraduate students
- Study = reading 265-word passage (< ½ page), repeatedly for 5 min
- Test = write down as much as could be remembered for 7 min
- Recall = 5 minutes or 1 week later, write down as much as could be remembered for 10 min

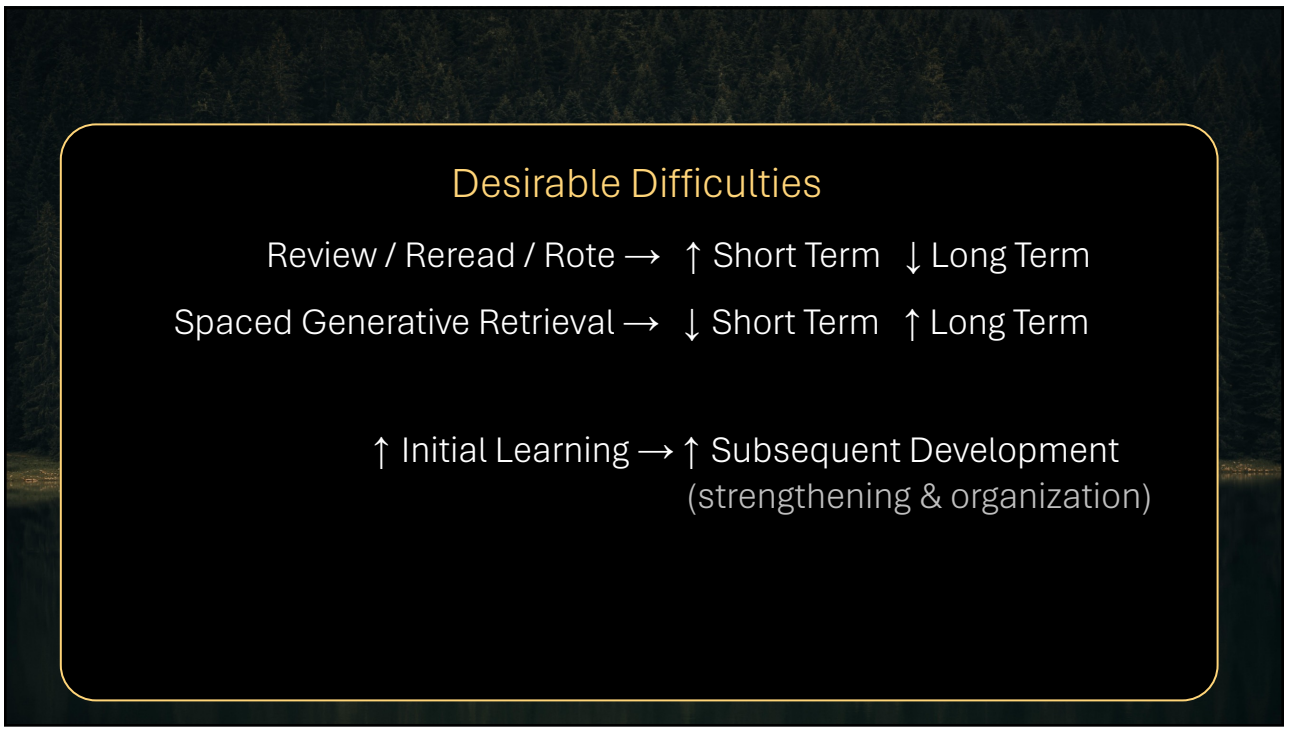
19

What did they find?

	5 Minutes	1 Week
S S S S		
S S S T		
S T T T		



20



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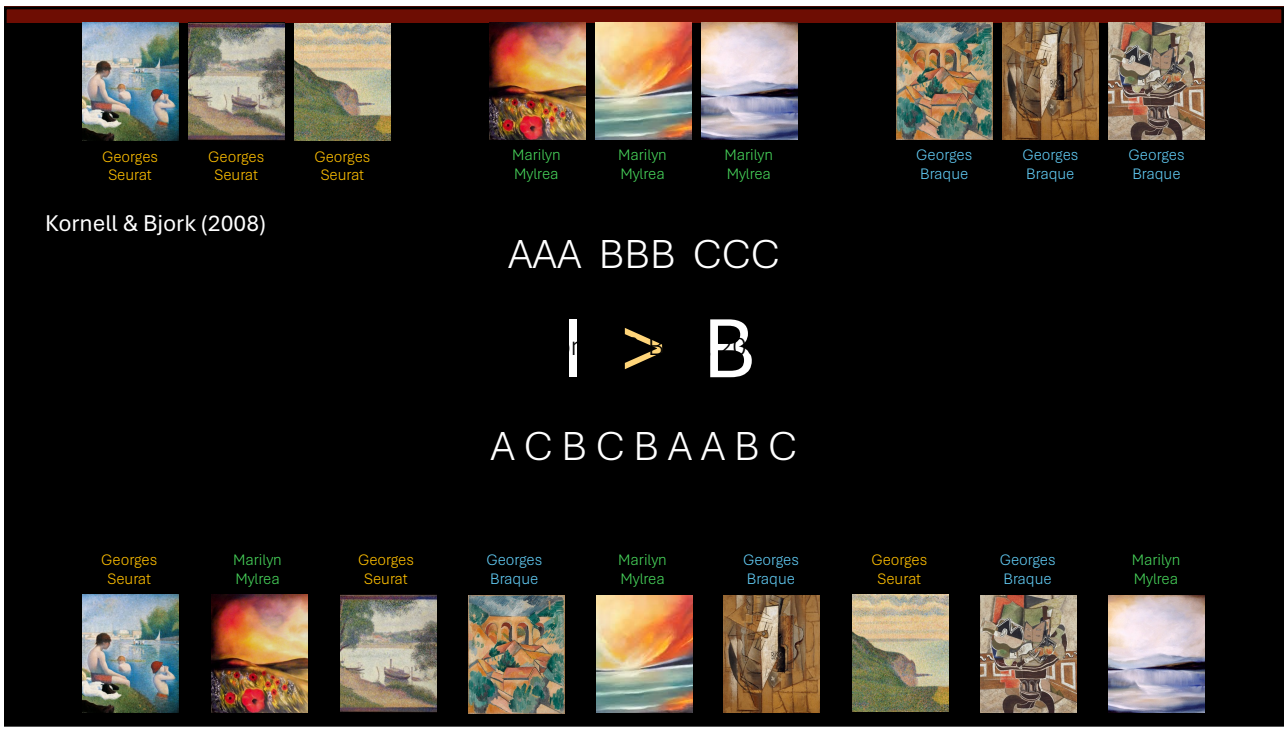
Interleaving

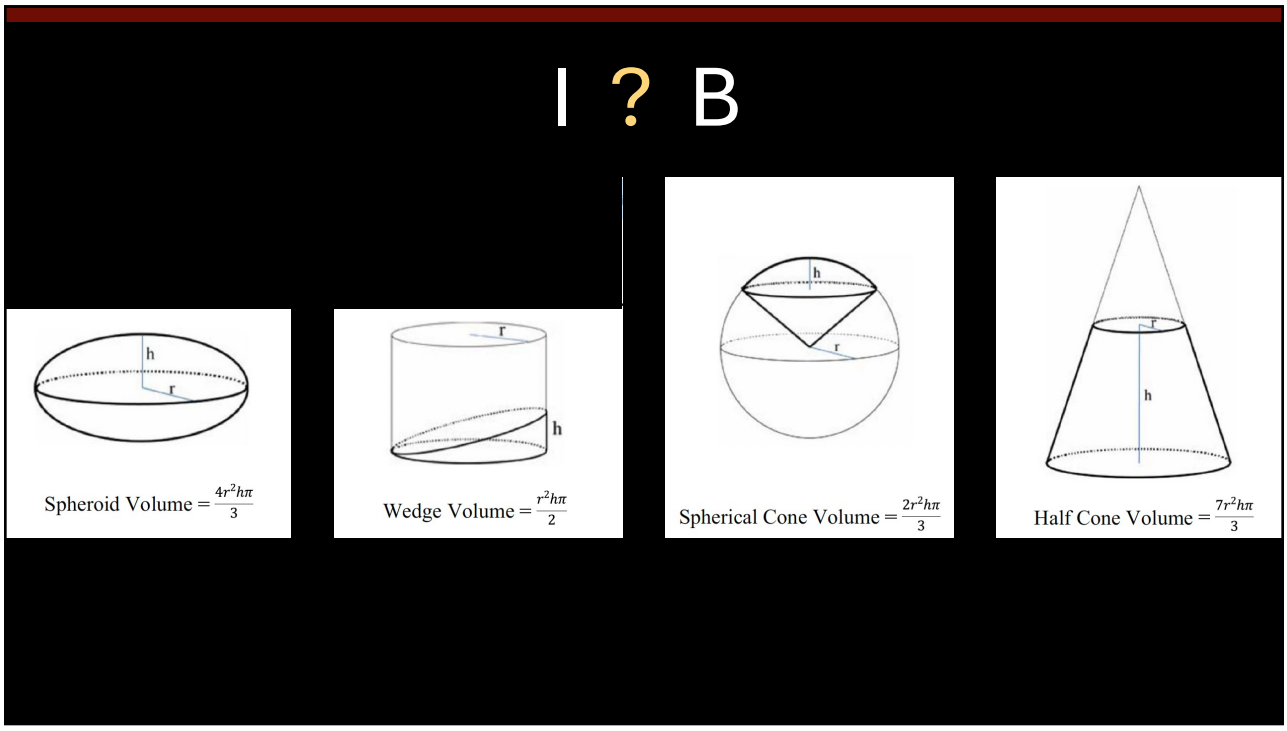
AAA BBB CCC

A C B C B A A B C

22


Georges Seurat
Georges Seurat
Georges Seurat
Marilyn Mylrea
Marilyn Mylrea
Marilyn Mylrea
Georges Braque
Georges Braque
Georges Braque
Kornell & Bjork (2008)
AAA BBB CCC
I > B
A C B C B A A B C
Georges Seurat
Marilyn Mylrea
Georges Seurat
Georges Braque
Marilyn Mylrea
Georges Braque
Georges Seurat
Georges Braque
Marilyn Mylrea

23


I ? B
h
r
Spheroid Volume = $\frac{4r^2h\pi}{3}$
r
h
Wedge Volume = $\frac{r^2h\pi}{2}$
h
r
Spherical Cone Volume = $\frac{2r^2h\pi}{3}$
r
h
Half Cone Volume = $\frac{7r^2h\pi}{3}$

24

$$\text{Spheroid Volume} = \frac{4r^2h\pi}{3}$$

$$\text{Wedge Volume} = \frac{r^2h\pi}{2}$$

$$\text{Spherical Cone Volume} = \frac{2r^2h\pi}{3}$$

$$\text{Half Cone Volume} = \frac{7r^2h\pi}{3}$$

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Cognitive Processing

Rote Learning vs Elaborative Learning

- Retrieval Effect
- Spacing Effect
- Generative Learning Effect
- Interleaving*

Spaced Generative Retrieval Practice

Spaced Generative Retrieval Practice

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Procedure-based Learning/Strengthening Strategies

1. Steps
   Acquisition of step-by-step
2. Practice
   Repetition w/o goals, feedback, or intent to improve.
3. Purposeful Practice
   Goal directed and self-guided, w/self-monitored feedback
4. Deliberate Practice
   Expert directed and guided, w/expert feedback
   Expert targeted practice on specific aspects

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What we process

we learn.

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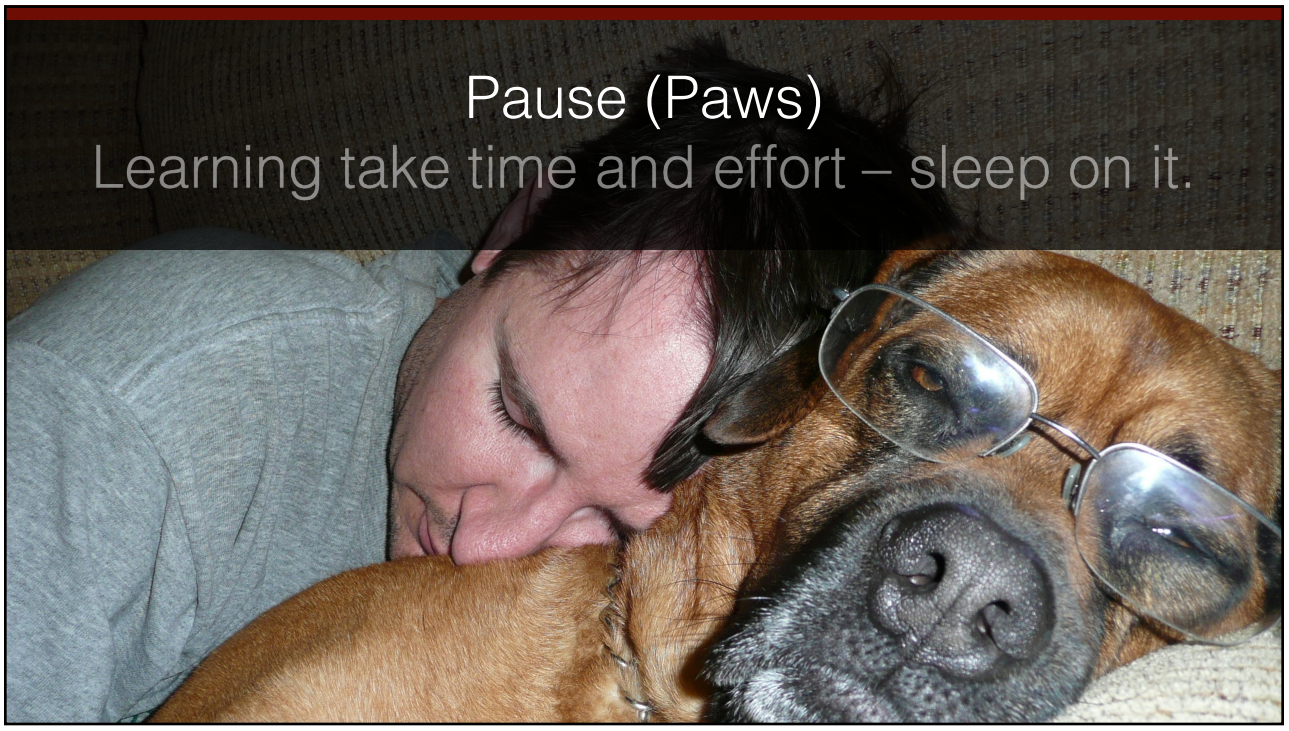
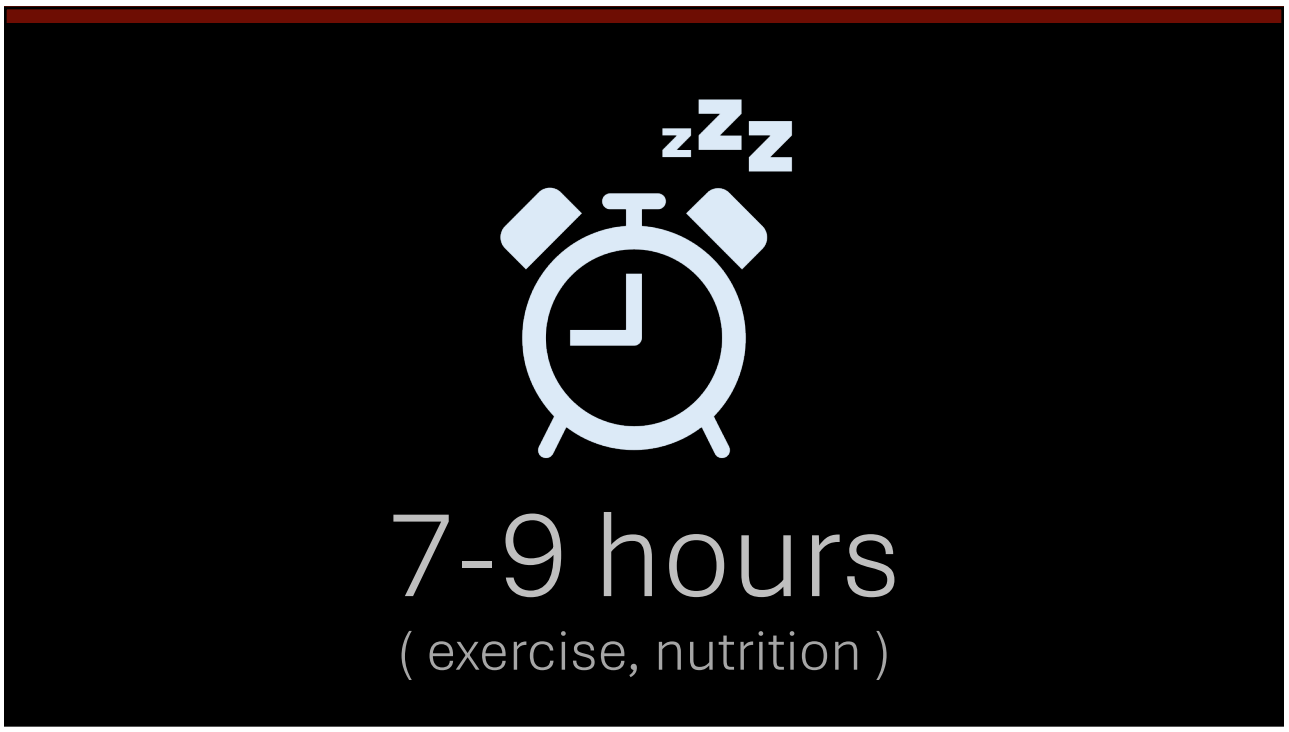
Cognitively
(thinking)
Behaviorally
(doing)
What we process, we learn.
Affectively
(emoting)
Socially
(interacting)

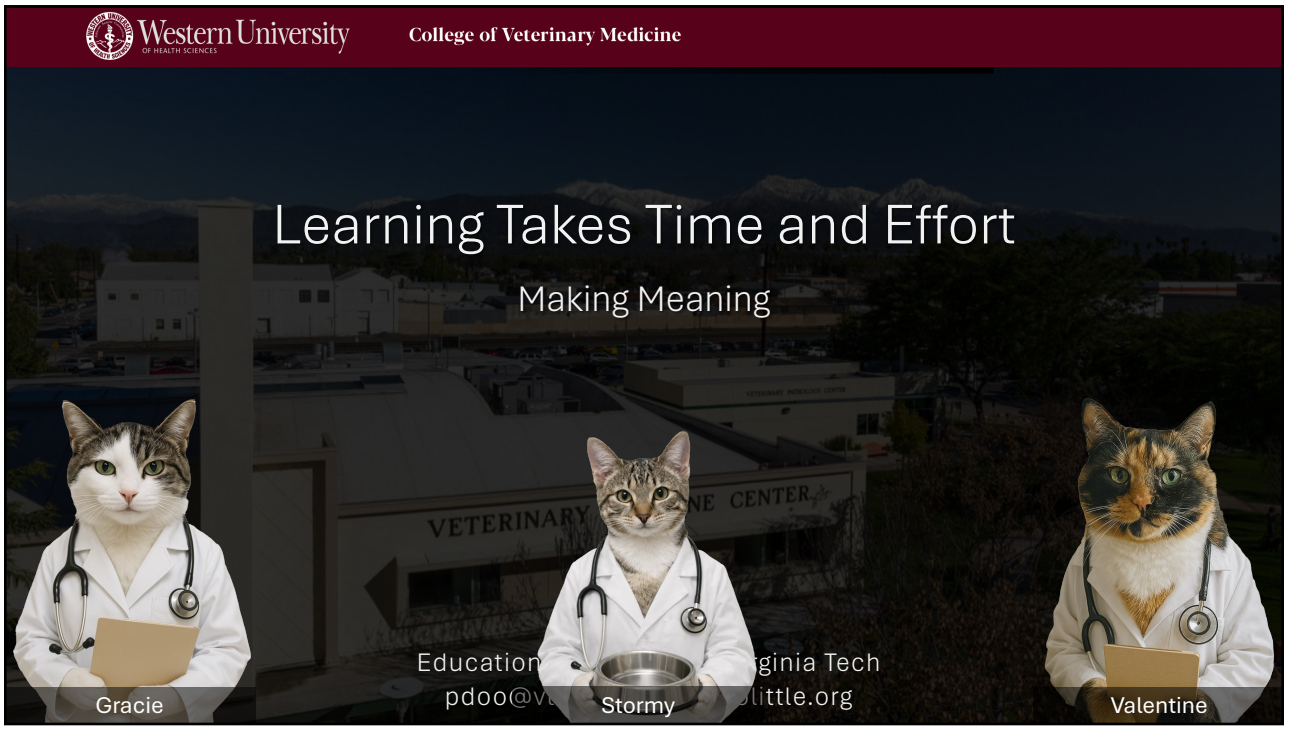
29


Pause (Paws)
Learning take time and effort – sleep on it.

30


7-9 hours
(exercise, nutrition)

31


Western University
OF HEALTH SCIENCES
College of Veterinary Medicine
Learning Takes Time and Effort
Making Meaning
Gracie
Stormy
Valentine

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