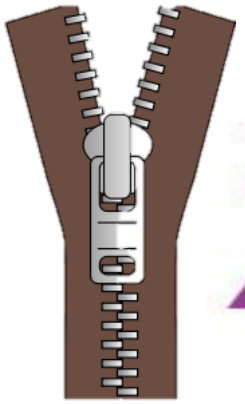
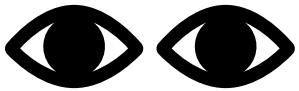


Zipinar



Can You Read My Slides?

Gail March Cohen, Ph.D.
Educator Development Program

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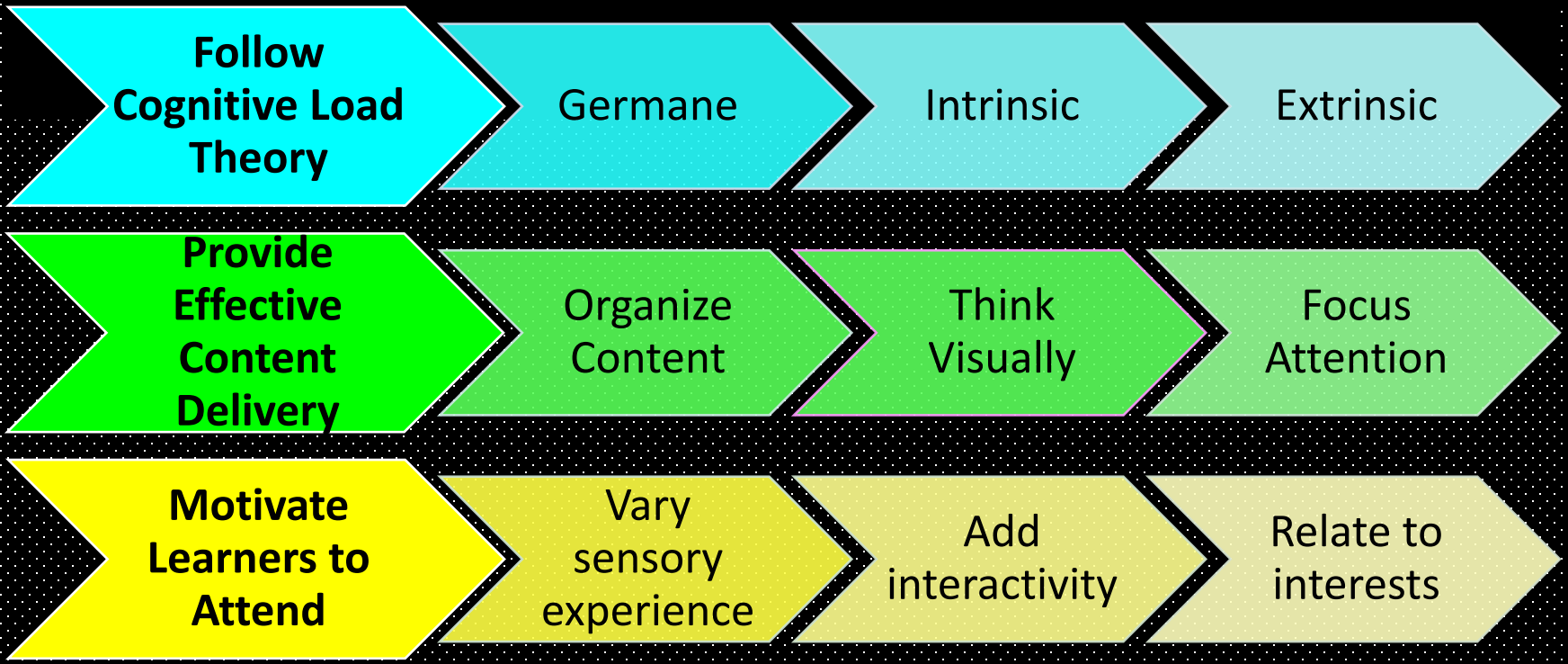
Goal: The purpose of this Zipinar is to present best practices in generating slides for effective teaching and learning.

Learning Objectives: By the end of this Zipinar, you will be able to:



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What about PowerPoint slides makes a presentation **NOT** work?

1. Heart Disease
2. Deoression
3. Strokee
4. COPD
5. Respeiratory Infection
6. Tuberculosis
7. War
8. GI diseases
9. HIV
10. Prenatal condiitions
11. Violence
12. Congenital anomally
13. **Self-infected injury**
14. Lung cancer

1. Heart disease
2. Depression
3. Traffic accidents
4. Stroke
5. COPD
6. Respiratory infection
7. Tuberculosis
8. War

Injury-related mortality rates (per 100 000 population) in WHO regions by age group and sex, 2000

Age group (years)	World			Africa		Americas		South-East Asia		Europe		Eastern Mediterranean		Western Pacific	
	Both Sexes	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
All ages	83.7	112.1	54.9	160.3	75.1	106.9	29.4	112.8	65.8	143.4	46.4	87.0	52.8	88.0	56.2
0–4	80.9	86.6	75.2	132.0	114.8	43.6	28.9	75.6	55.3	42.3	28.0	97.1	109.1	101.4	96.8
5–14	39.9	44.3	35.4	86.9	53.5	19.2	9.3	47.7	56.8	27.4	11.9	41.3	36.0	37.3	23.6
15–29	79.5	110.7	46.9	143.9	59.1	143.6	25.2	112.8	62.4	128.3	28.4	88.2	43.1	77.5	46.6
30–44	87.5	128.6	45.2	221.0	71.4	133.7	24.2	129.4	57.0	184.7	36.1	93.0	37.5	84.8	44.9
45–59	98.7	146.0	51.2	274.4	89.0	117.2	26.2	159.3	60.2	198.6	47.4	116.0	43.5	100.8	52.8
60–69	121.4	174.7	72.9	380.7	140.0	118.2	37.5	214.7	94.6	175.7	55.6	150.0	66.7	140.4	78.8
70–79	161.4	226.0	113.0	522.4	128.0	169.2	70.6	287.5	172.2	168.2	82.9	225.0	150.0	219.2	134.4
≥80	313.6	404.9	263.8	439.6	200.0	380.0	222.2	460.0	300.0	342.9	262.5	400.0	400.0	385.7	308.3

Distribution of the global burden of injury (DALYs lost) by cause, 2000

Road traffic injury mortality rates by WHO region, income level and sex, 2000

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PowerPoint Pitfalls – challenge readability and learning

- Everything starts with a bullet
- Lengthy, wordy passages
- Misspelled words
- No graphics – all text
- Presentation used as a crutch

Organizing content

Formatting

Too many animations

Inappropriate images

Distracting templates

Poor choices for background colors

Distracting transitions

Too busy, too many colors

Poor font choices

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To avoid

http://bit.ly/hnhxRe

Apply effective PowerPoint best practices

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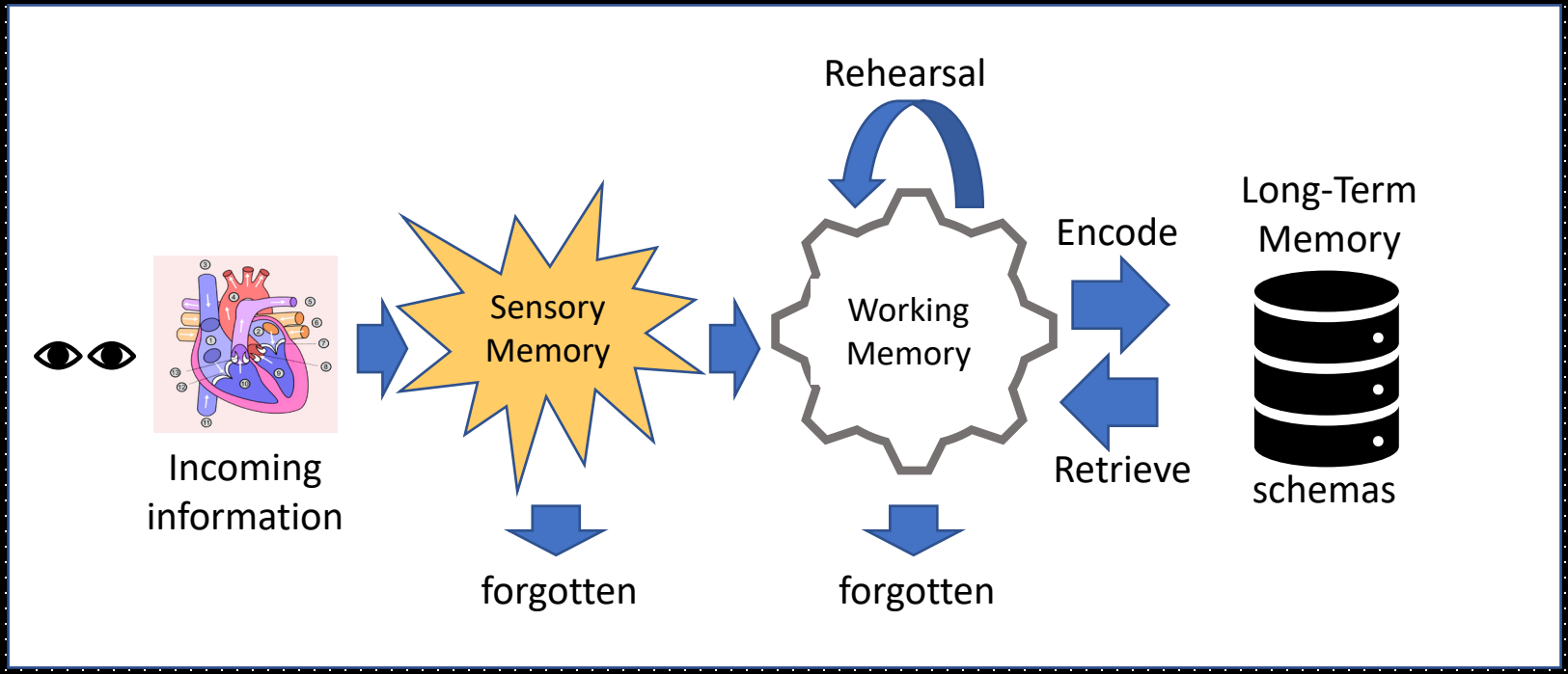
How do we process information?



Sensory Memory filters out the important information and passes it into Working Memory that can hold 5-9 chunks of information that moves along into Long-Term Memory for storage in structures called "schemas."

Adapted from Atkinson, R.C. and Shiffrin, R.M. (1968). 'Human memory: A Proposed System and its Control Processes'. In Spence, K.W. and Spence, J.T. *The psychology of learning and motivation*, (Volume 2). New York: Academic Press. pp. 89–195.

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Cognitive Load Theory

= The amount of information that can be processed in working memory at one time.

Instead of presenting a group of rote facts, apply cognitive structures or "schemas" for effective learning

Consider:

Germane Cognitive Load: Process of integrating new learning

Intrinsic Cognitive Load: Learning level effort and difficulty

Extrinsic Cognitive Load: Presentation of learning

John Sweller, founder of Cognitive Load Theory (1989)

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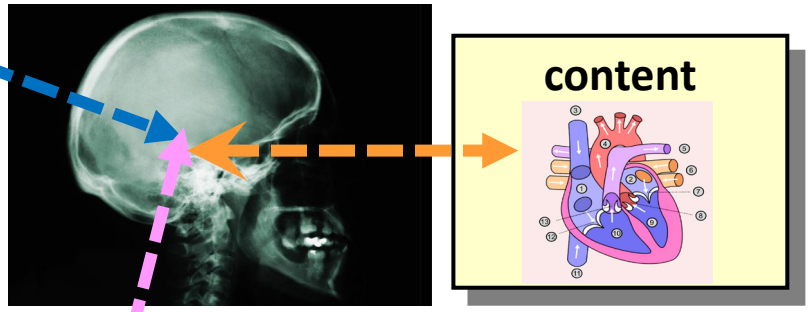
Germane Cognitive Load = integrating process, construction, and automation of schemas (the storage of knowledge)

Students encode, store and retrieve information by:

Learning style

Described by theories

- VARK
- Kolb
- Multiple Intelligences



Learning experience/personality

Motivates interest in content

– Through their previous academic, cultural and social knowledge

– Screened by their preferred interests to attend to the content

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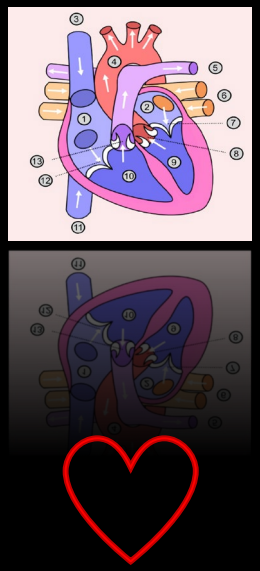
Increase Germane Cognitive Load

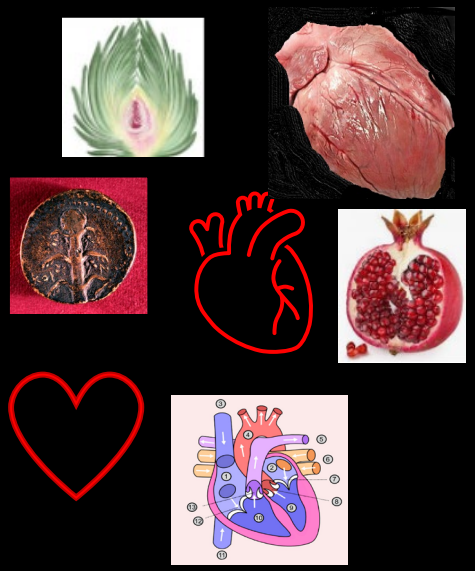
Reflection

Connect new content to previous experiences



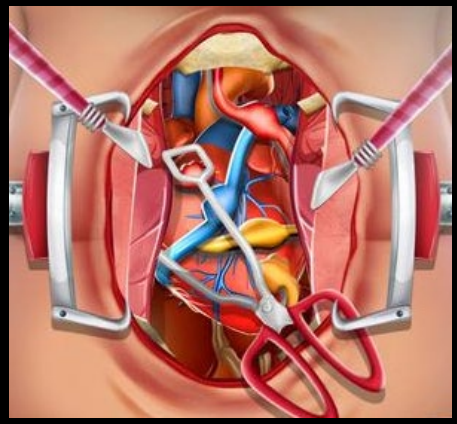
Interleaving

Present similar concepts to differentiate and avoid incorrect schemas



Work Examples

Provide explanations with solutions to create schemas



Fuhrman J. Students' learning systems function more efficiently. The International Institute for Innovative Instruction. June 6, 2017. Available at https://www.franklin.edu/institute/blog/cognitive-load-theory-helping-students-learning-systems-function-more-efficiently. Verufued 12/23/21.

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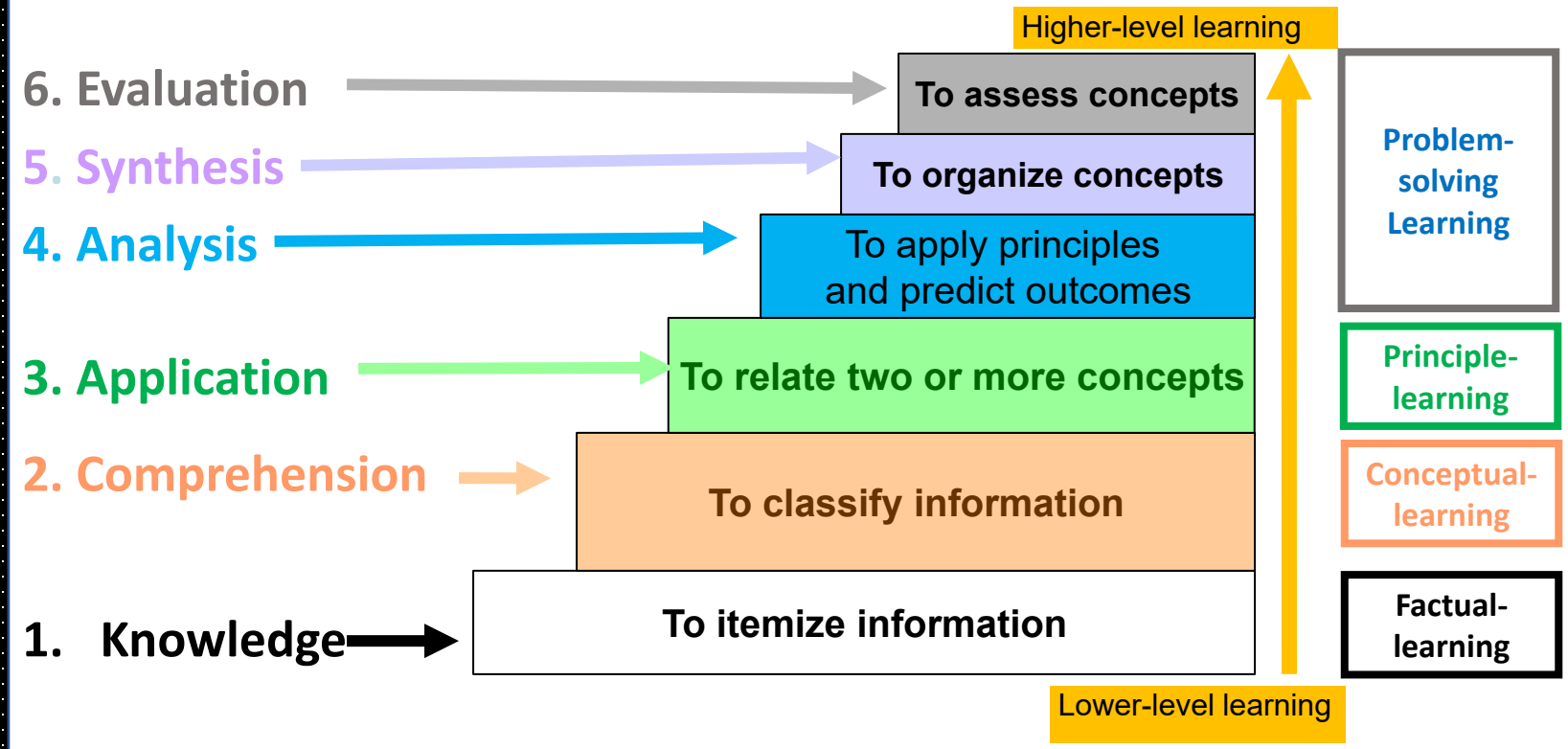
Intrinsic Cognitive Load = level of learning difficulty in the instructional presentation that may need subschemas



Bloom B. The taxonomy of educational objectives:--Cognitive Domain. NY: Longman. 1984.

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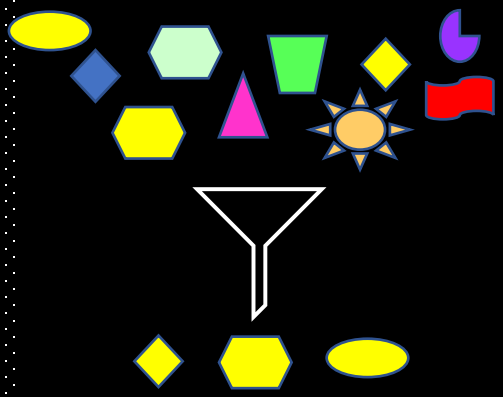
Increase Intrinsic Cognitive Load

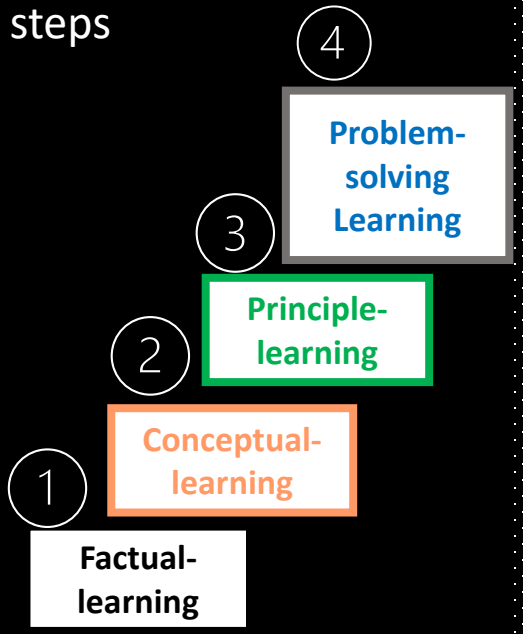
Focusing

Filter out information to pass important concept into working memory



Sequencing

Build concept logically to increase learning in steps



Chunking

Provide smaller concept units to reduce difficulty

Fuhrman J. Students' learning systems function more efficiently. The International Institute for Innovative Instruction. June 6, 2017. Available at https://www.franklin.edu/institute/blog/cognitive-load-theory-helping-students-learning-systems-function-more-efficiently. Verufued 12/23/21.

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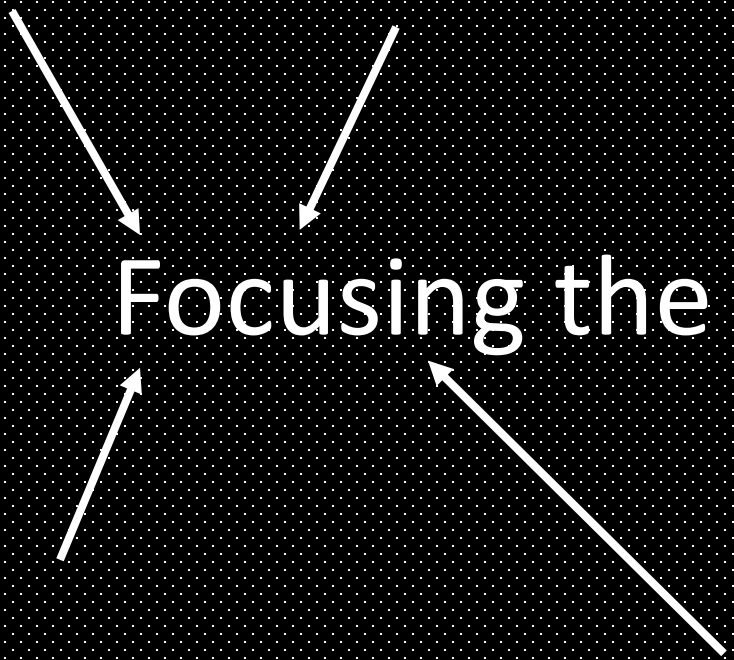
Efficiency in Learning

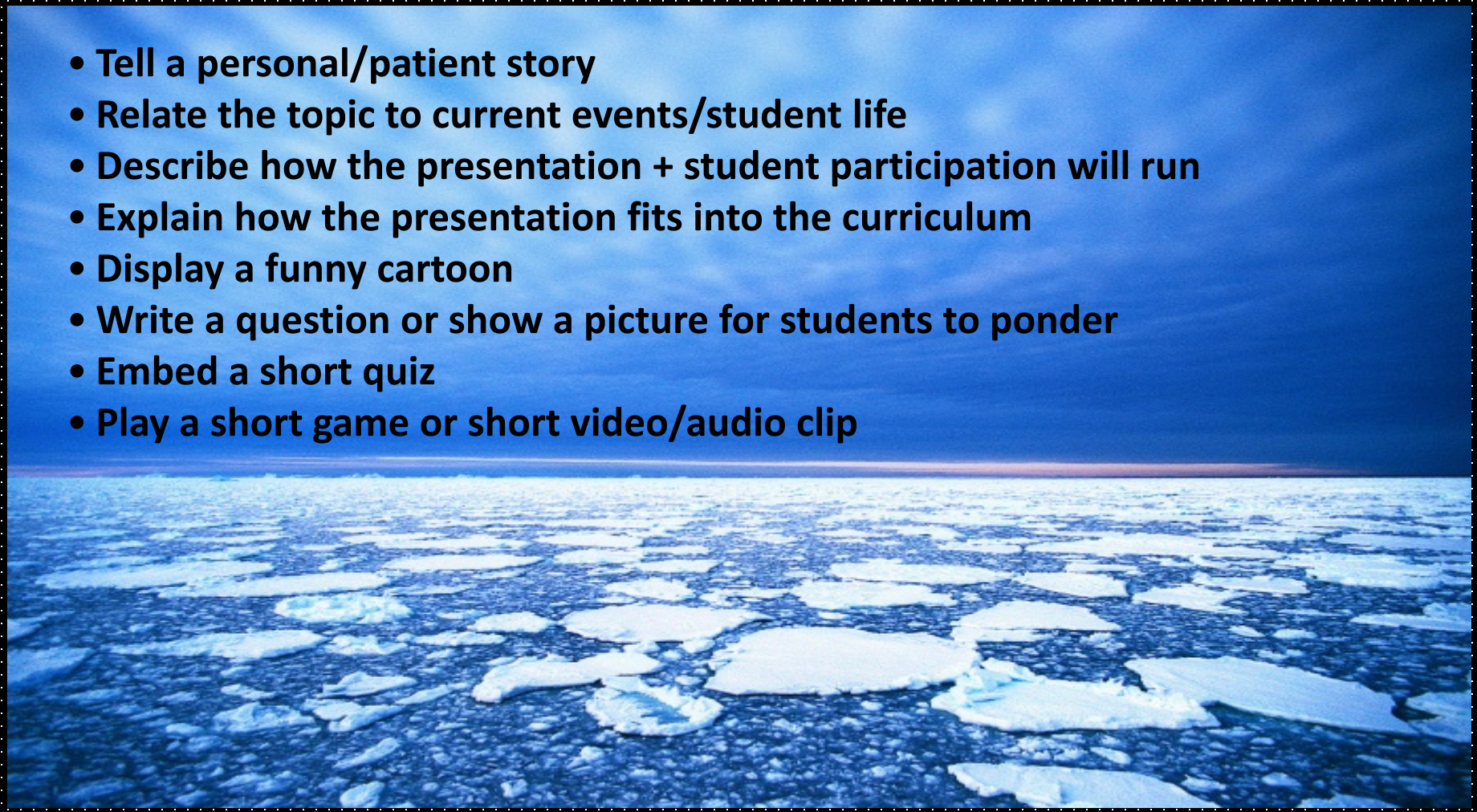
Managing relevant cognitive load by --



Focusing the learner's attention

Introduce the Content:

Focus with an Icebreaker



- Tell a personal/patient story
- Relate the topic to current events/student life
- Describe how the presentation + student participation will run
- Explain how the presentation fits into the curriculum
- Display a funny cartoon
- Write a question or show a picture for students to ponder
- Embed a short quiz
- Play a short game or short video/audio clip

Sequencing: Content Decision Points – tell a story

1. **How will you introduce the content?**
2. **How will you deliver the content?**
3. **How will you conclude the content presentation?**

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Focus Attention to Slide Presentation by

Providing presentation goal and learning objectives

Initiating discussion with an icebreaker/formative quiz

Asking a question or pose a problem to stimulate discussion

Changing colors of backgrounds or text

Adding motion when needed

Playing an audio track

Using visuals for analogies or metaphors

Appealing to learner's interest

Allowing learner to participation in presentation with a game

***Tip*: The key idea is offer variety, but do not overdo it.**

Insert Appropriate visuals – use image instead of text

Depicting depression

http://diabetesthensome.blogspot.com/2011/01/depression.html

Too distracting unless your content is about lion mothers & cubs

http://movies.nationalgeographic.com/movies/last-lions/about/

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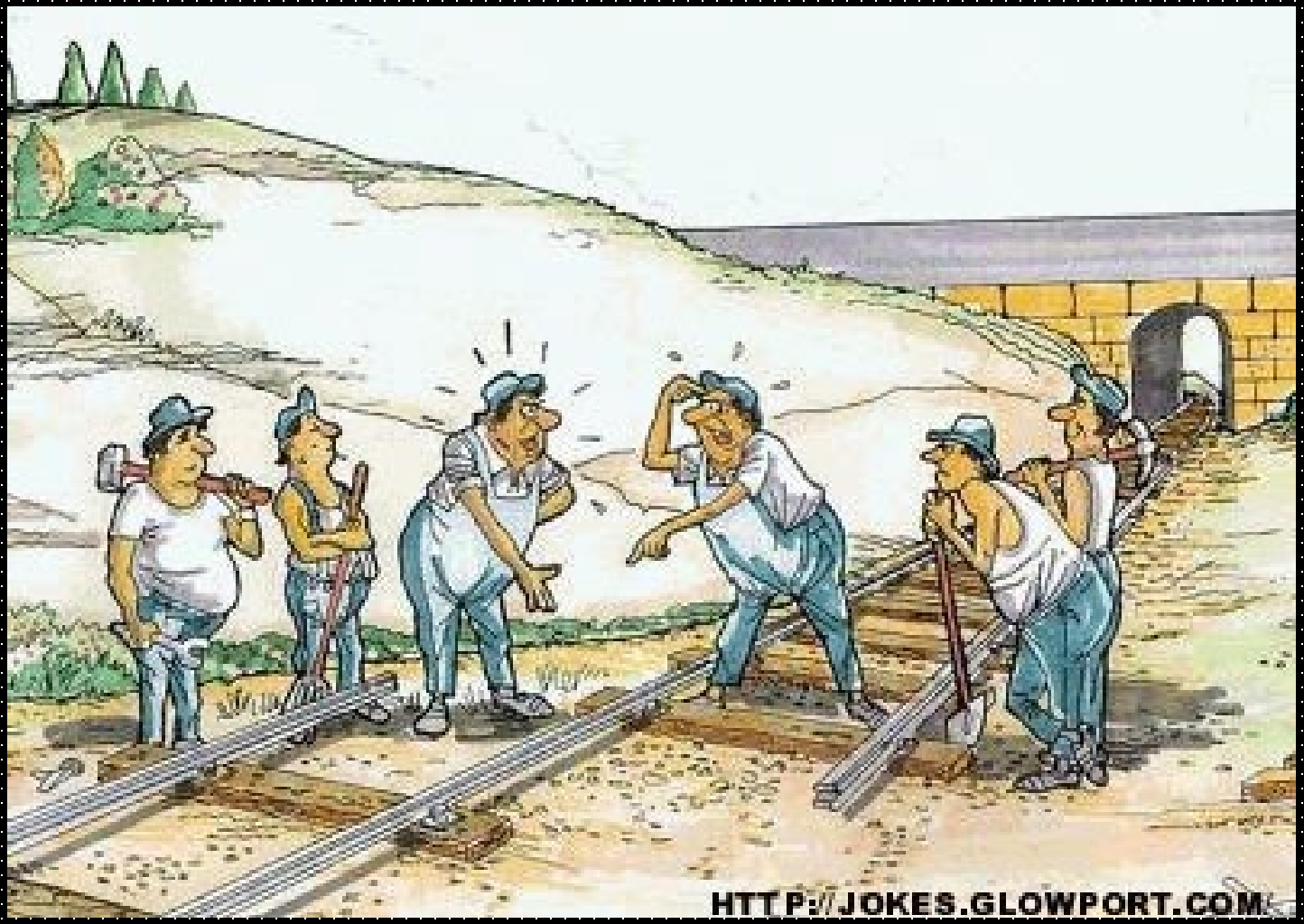
Use Analogies or Metaphors

Like a finishing line –

Learning objectives describe what is expected of you to achieve by the end of the learning

By the end of the Zipinar, you will be able to:

Focus Learner's Attention -- Pose Problems to Solve



How would you manage this situation?

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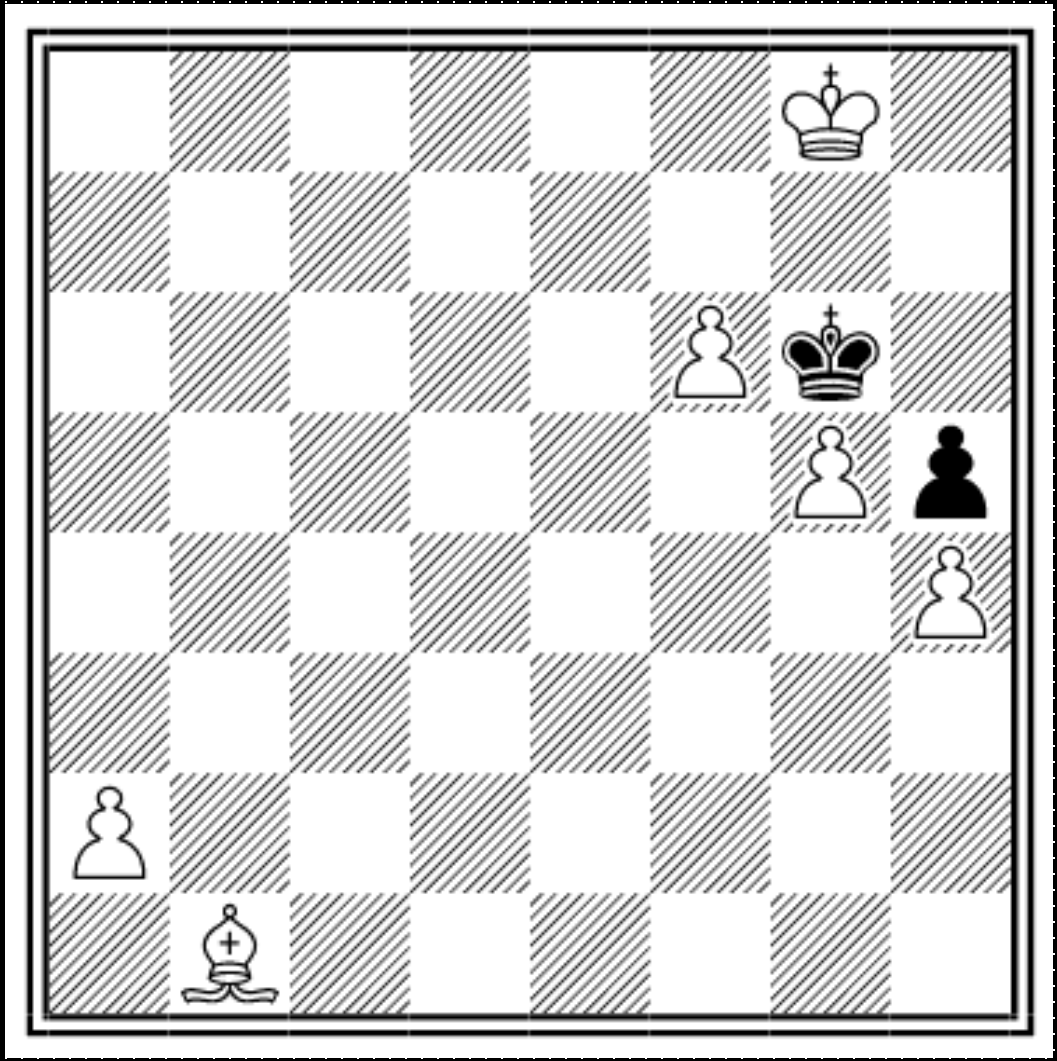
Focus Learner's Attention --

Allow Learner to Participate



Games

Practice Quiz

Know-Pair-Share discussions

Panel Topic

Debate Question

Predictions of outcomes

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Focus Attention with Readable Font Sizes

TITLE TEXT

Font size is 44 points -- 36 pts

SUBTITLES

Font size is 38 pt. – 32 pt.

BODY TEXT SIZE

Font size is 24 pt – **20 pt (16 pt for online presentation)**

TOO SMALL

Font size is 12 pt. OK for citing sources on a slide.

Focus Attention with Readable Fonts -- Styles

Use

- Sans serif for easier reading
- Color, **bolding**, capitals, **different fonts** to emphasize a point
- Limit font styles for consistency (optional)
  1. one for title
  2. one for the body
  3. one for labels

Do NOT use:

- **Serif fonts**
- ***Italics***
- **Underlining (except for internet links)**
- ALL CAPITALS (like yelling at your learners)
- Stacked vertically (English read horizontally left to right)
- **Dropped shadows**

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Focus Attention with Text & Backgrounds

Light text on dark backgrounds

Light
Sans Serif Text

On Dark
Background

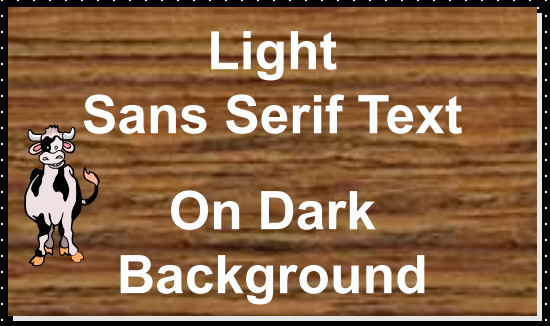
OR dark text on light backgrounds

Dark
Sans Serif Text

On Light
Background

Avoid distracting backgrounds, photos or clip art

No text over images



Less text more images

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Focus Attention with Color

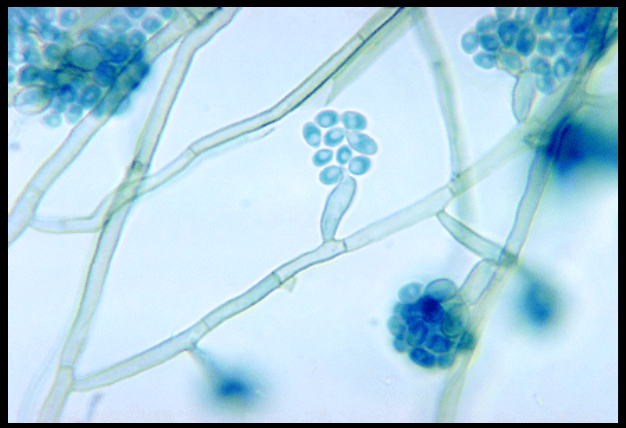
Differentiate background color for specific slides

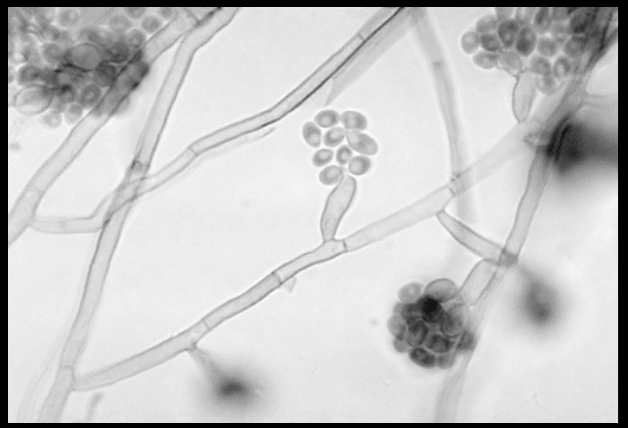
Differentiate color text for emphasis

Differentiate color frame to organize slide

Differentiate with contrasting colors (NOT red on green)

Differentiate image with color or black and white





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Decrease Difficulty – keep text readable

Text on slides compliment your instruction*

- Avoid lots of slide text
- Limit colors to blocks of text
- Follow the 6 X 6 rule (“Joy of Six”)
  - Limit to 6 lines per slide
  - Limit to 6 words per line

*A Zipinar is a slide book where it is OK to have more text because the learner focuses only on the slides without an instructor.

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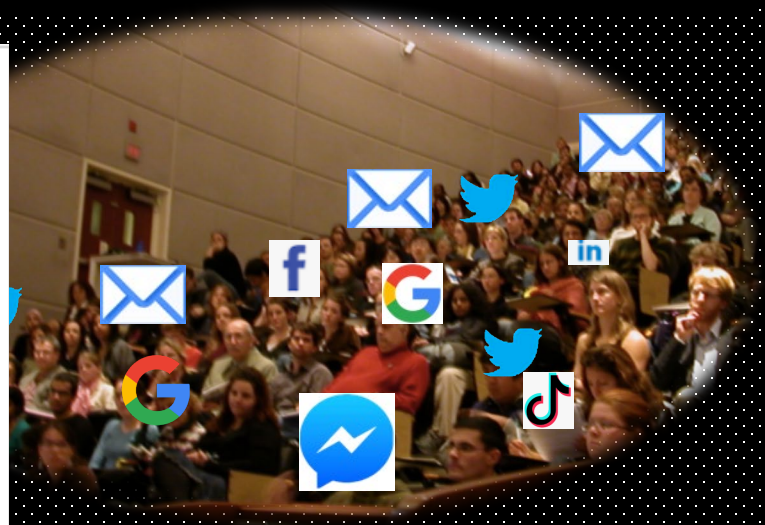
Extrinsic Cognitive Load = the manner in which information is presented to the learner

This Is Some Important Point

- ✓ One amazing fact that you didn't realize
- ✓ Another amazing fact that maybe you knew
- ✓ A third fact that you might have know, but didn't realize was relevant
- ✓ And, of course, a fourth fact that needs to be stated because you can't just say it and expect them to remember
- ✓ And a fifth point, just for luck
- ✓ Oh, and did I mention point #6 too?
- ✓ And there's an important conclusion too



Too much slide information and the learner finds it difficult to focus and then seeks distractions

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Reduce Extrinsic Load -- Dynamic Delivery of Content

This Is Some Important Point

- ✓ One amazing fact that you didn't realize
- ✓ Another amazing fact that maybe you knew
- ✓ A third fact that you might have know, but didn't realize was relevant
- ✓ And, of course, a fourth fact that needs to be stated because you can't just say it and expect them to remember
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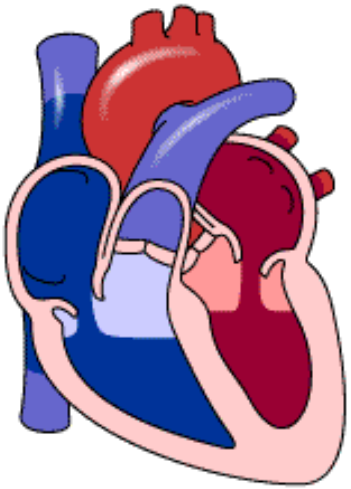

Instead of a bullet list, use an animated pumping heart to focus learners' attention away from any distractions (e.g., eMail, Twitter, Google)

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Reduce Extrinsic Cognitive Load

Organization

Follow and sequence concepts by objectives

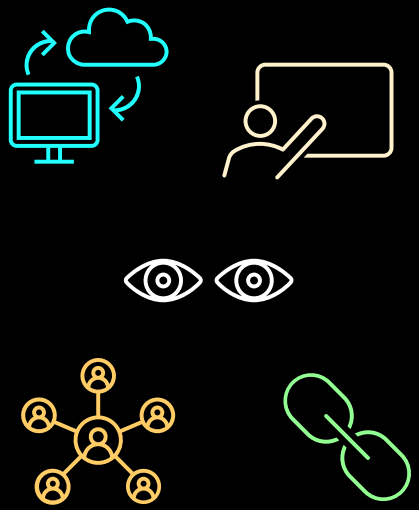
1. Objective

2. Objective

3. Objective

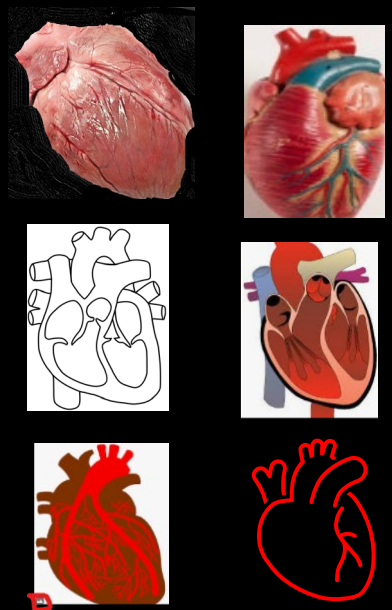
Split Attention

Avoid linking to external sources



Redundancy

Focus on concept without repeating same ideas



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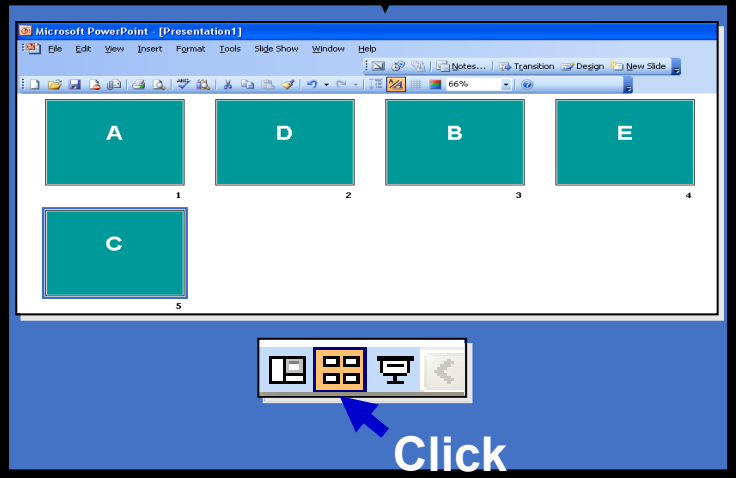
Efficiency in Learning -- Managing relevant cognitive load

Manage working memory capacity

Weeding = an instructional strategy to **eliminate unnecessary or redundant content** and minimize cognitive load.

Use Slide Sorter to Weed Out Redundancies



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Emphasis & Whitespace – reduce distractions

Structure Slide Space

Vary the font size and weight (**bold**/regular)

No more than 2 levels of text

Use whitespace to focus learner's attention to important text and images

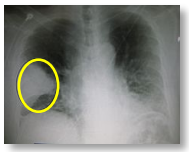
Choosing Antimicrobial Therapy for Patient with VAP

Decision Point:

1. Antibiotic for MRSA? Vancomycin or Linezolid
2. Possible MDR gram negative/ Pseudomonas?
   One or two antibiotics active vs. gram negative rods, including pseudomonas

Antimicrobial Therapy for Patient with VAP

1. **Antibiotic for MRSA?**
   Vancomycin or Linezolid
2. **Possible MDR gram negative/Pseudomonas?**
   One or two antibiotics active vs. gram negative rods, including pseudomonas



Reduce Extrinsic Cognitive Load -- limit information needed for level of learning

Simplify Tables

Injury-related mortality rates (per 100 000 population) in WHO regions by age group and sex, 2000

Age group (years)	World		
	Both Sexes	Male	Female
All ages	83.7	112.1	54.9
0–4	80.9	86.6	75.2
5–14	39.9	44.3	35.4
15–29	79.5	110.7	46.9
30–44	87.5	128.6	46.2
45–59	98.7	146.0	51.2
60–69	121.4	174.7	72.9
70–79	161.4	226.0	113.0
≥80	313.6	404.9	263.8

More info than is needed

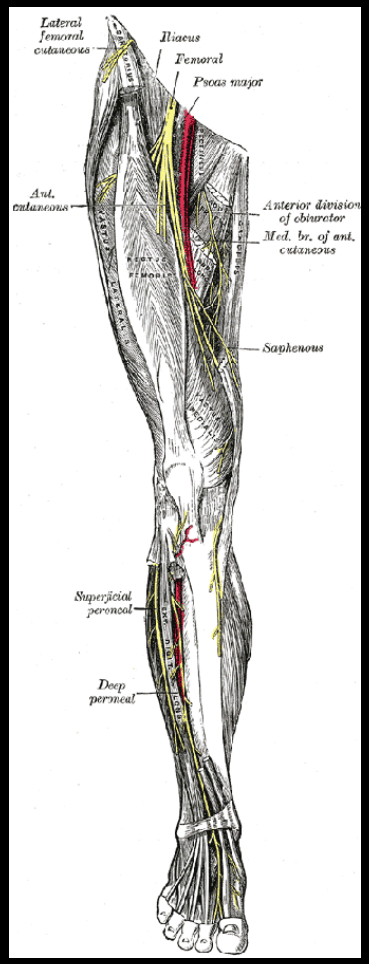
Focused info

Age Group	Americas		Europe	
(years)	Male	Female	Male	Female
All Ages	106.8	29.4	143.4	46.4
0 – 4	43.6	28.9	42.3	28.0
5 – 14	19.2	9.3	27.4	11.9
15 -- 29	143.8	25.2	123.4	28.4
30 -- 44	133.7	24.2	184.7	36.1

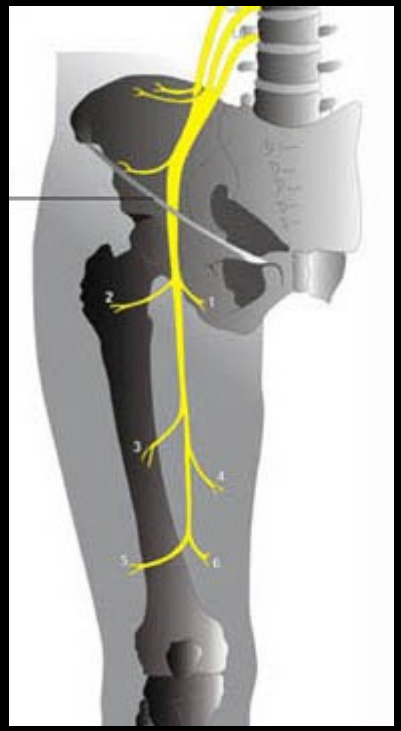
Reduce Extrinsic Cognitive Load = display images in subschemas to build learning

Simplify Illustrations

More info than is needed



Gray H. Anatomy of the Human Body



Focused info

Transabled.org

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Key Points

Cognitive Load Theory – Germane (encoding, retrieving, & storage), Intrinsic (difficulty level), and Extrinsic (reduced distractions)

Dynamic Delivery of Content – organize content, limit bullets, and include animation, appropriate images, and analogies/metaphors

Focus the Presentation– think visually with backgrounds, fonts, colors, spacing, contrast, and limited wording

Motivate the learner to attend– variety in presentation style, include interests, and participation in interactivity of answering questions exercises, peer exercises, and games

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Reading Sources

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University of California San Francisco. Slide design tips Available at https://meded.ucsf.edu/tee/slides# . Verified 12/21/21.

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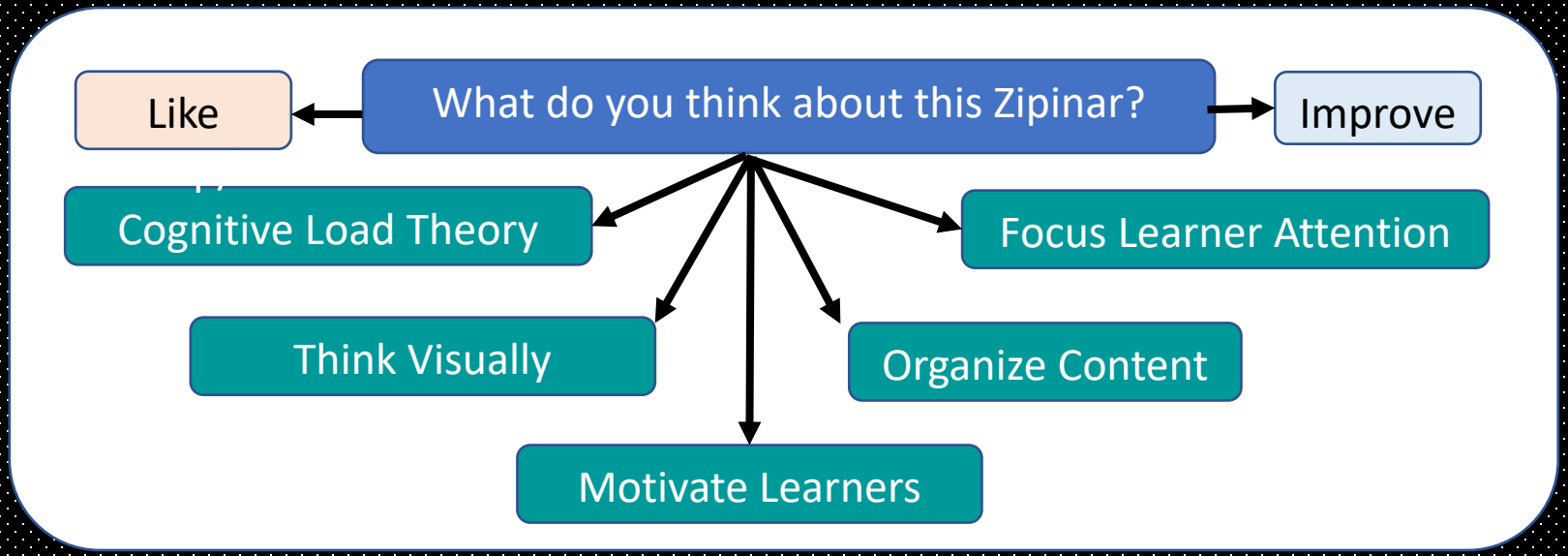
Your Thoughts?



Please click on this **LINK** and take the brief survey and share your thoughts about this Zipinar.

For Residents, fellows, graduate students and medical students; please enter your name and site so that UMMS and your clinical site knows you viewed this Zipinar.

Thank you for taking the time to view this quick overview.

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