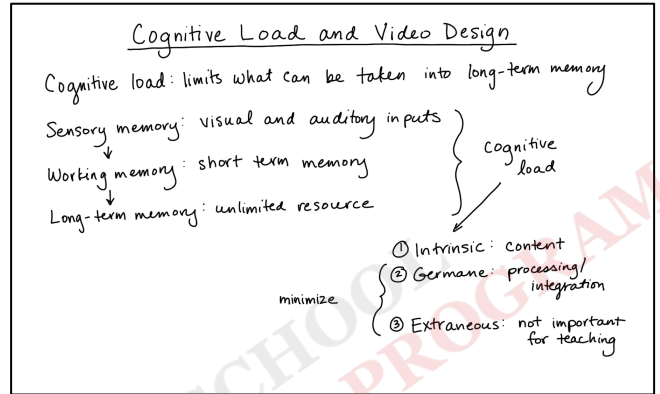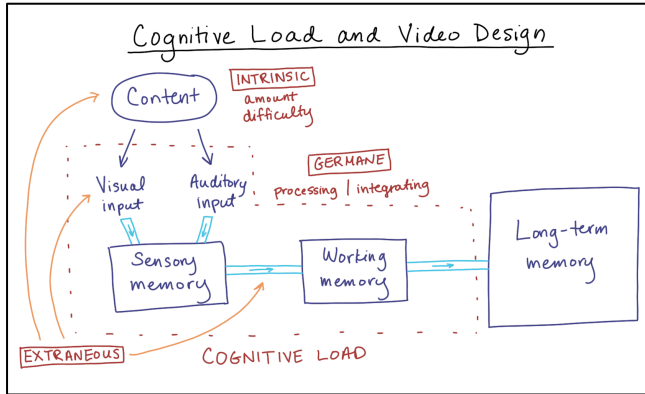# CREATING ENGAGING AND EFFECTIVE WHITEBOARD VIDEOS

- How did these videos differ?

- What did you like and dislike about each video?

- What features could be used in a video to reduce cognitive load?

Notes

PLANNING A WHITEBOARD VIDEO

Bloom's Taxonomy Verbs

Evaluation
Make and defend judgments based on internal evidence or external criteria.

Synthesis
Compile component ideas into a new whole or propose alternative solutions.

Analysis
Break down objects or ideas into simpler parts and find evidence to support generalizations.

Application
Apply knowledge to actual situations.

Comprehension
Demonstrate an understanding of the facts.

Knowledge
Remember previously learned information.

appraise argue assess attach choose compare conclude contrast defend describe discriminate estimate evaluate explain judge justify interpret relate predict rate select summarize support value

arrange assemble categorize collect combine comply compose construct create design develop devise explain formulate generate plan prepare rearrange reconstruct relate reorganize revise rewrite set up summarize synthesize tell write

analyze appraise breakdown calculate categorize compare contrast criticize diagram differentiate discriminate distinguish examine experiment identify illustrate infer model outline point out question relate select separate subdivide test

apply change choose compute demonstrate discover dramatize employ illustrate interpret manipulate modify operate practice predict prepare produce relate schedule show sketch solve use write

classify convert defend describe discuss distinguish estimate explain express extend generalized give example(s) identify indicate infer locate paraphrase predict recognize rewrite review select summarize translate

arrange define describe duplicate identify label list match memorize name order outline recognize relate recall repeat reproduce select state
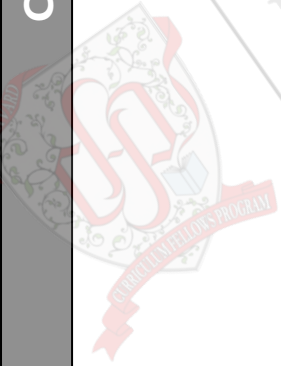
Higher Order Thinking Skills

Lower Order Thinking Skills

Fractus Learning

Define the learning objectives	List the key terms and concepts

- **References**
  - Guo PJ, Kim J, Rubin R. 2014. How video production affects student engagement: an empirical study of MOOC videos, p. 41–50. In Proceedings of the first ACM conference on Learning @ scale conference. ACM.
    - *Largest study on student engagement with video content, covering a broad range of video types. Offers guidelines for video planning and design to increase engagement.*
  - Brame CJ. 2016. Effective Educational Videos: Principles and Guidelines for Maximizing Student Learning from Video Content. CBE Life Sci Educ 15.
    - *Excellent review about designing videos for effective learning. Provides an overview of cognitive load and provides concrete suggestions to incorporate into video design.*
  - Mayer RE. 2008. Applying the science of learning: evidence-based principles for the design of multimedia instruction. Am Psychol 63:760–769.
    - *More technical review on cognitive theory and recommendations for applying these principles to the design of multimedia teaching materials.*
  - http://www.celt.iastate.edu/wp-content/uploads/2015/09/RevisedBloomsHandout-1.pdf
    - *Helpful summary of Bloom's taxonomy and designing learning objectives from the Center for Excellence in Learning and Teaching at Iowa State University.*

- **Resources for producing videos**
  - Visual input devices
    - SMART boards (HMS conference rooms)
      - *Have built-in features for drawing and recording*
    - Tablet / tablet computer (Windows / Android / iPad)
    - Wacom graphics tablet (PC / Mac)
  - Drawing software
    - OneNote / Paint (PC, free)
    - Autodesk Sketchbook (PC / Mac / Android / iOS, $-$$)
  - Screencasting / editing software
    - Screencast-o-matic (PC / Mac, free, $ full feature)
      - *Used by Khan Academy*
    - Quicktime (Mac, free)
    - Screenflow (Mac, $$$)