Senior Seminar: Visualizations
Schwartz

Unit Objectives: Cognitive Load Theory
Sweller, van Merrienboer & Paas Article

Students should be able to:

1. Describe what is meant by “cognitive load”.

2. Explain why the seminal research of De Groot and Simon and his colleagues is so compelling.

3. Describe what is meant by: a) schema construction; and b) schema activation.

4. Explain why schema construction and schema activation are relevant to a discussion of cognitive load.

5. Describe the concept of “automaticity” and explain its role and function relative to the concept of cognitive load.

6. Differentiate between intrinsic, extraneous, and germane cognitive load.

7. Explain the influence of element interactivity on intrinsic cognitive load.

8. Identify and describe sources of extraneous cognitive load that can be reduced instructional designs to make them more effective.

9. Using the discussion of Sweller et al. on germane cognitive load, explain how visualization tools can enhance germane cognitive load while reducing extraneous cognitive load.