

Faculty of Education Studies
EPCL Public Seminar 2008/09

Cognitive load theory and its instructional effects

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Chair : Dr Kevin Chung

Prof Sweller's research reputation is associated with cognitive load theory, an instructional theory based on our knowledge of human cognitive architecture. The theory is now a contributor to both research and debate on issues associated with human cognitive architecture, its links to evolution by natural selection, and the instructional design consequences that follow. It is one of the few theories to have generated a large range of novel instructional designs from our knowledge of human cognitive architecture. The following instructional design effects have flowed from cognitive load theory: goal-free, worked example, split-attention, redundancy, modality, element interactivity, isolated-interacting elements, imagination, expertise reversal, completion, variable examples, and guidance fading effects. These effects have been studied by many groups of researchers from around the globe.

Abstract

Cognitive load theory is an instructional theory based on our knowledge of human cognitive structures and processes. The theory has been used to generate a wide range of instructional procedures, some of which will be discussed in this talk. Several questions will be discussed. Why is studying worked examples superior to solving the equivalent problems? Why is it better to place text on a diagram rather than next to a diagram? When is it better to present text in spoken rather than written form? Why is it better to present text in either written or spoken form but not both simultaneously? As students learn more of a subject, why can presenting them with additional information result in less rather than more learning? Why does the way we present learners with information only really matter when that information is complex? Why can asking learners to imagine information result in faster learning than asking them to study information? The answers to these questions all flow directly from what we know of human cognitive structures and processes. Those cognitive structures and processes will be discussed along with the instructional design principles that provide answers to the above questions.

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3:30 – 4:40 pm

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