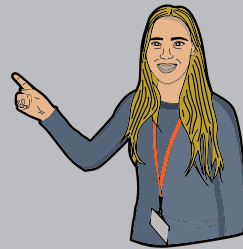


Cognitive Load | Pt 1

SUMMARY

What Every Teacher Needs to Know
by Jade Pearce | illustrated by Zeph Bennett



Part 2

Chapter 22

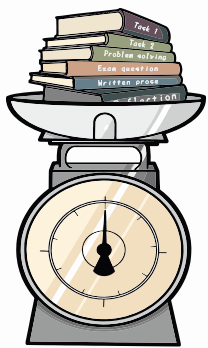
Cognitive Architecture

Worked Example Effect

Redundancy Effect

The Multimedia Effect

The working memory is where we consciously think and is limited in capacity and duration. The long-term memory is a virtually unlimited store of knowledge and experiences. Learning occurs when we transfer information from our working memory to our long-term memory. If the working memory is overloaded, this transfer into the long-term memory, and therefore learning, is reduced.

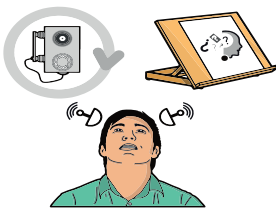


Cognitive load refers to the mental load that performing a task places on our working memory. Intrinsic cognitive load comes from the nature of the information being processed including the 'element interactivity' of the material and learners' prior knowledge. Extraneous cognitive load is determined by the manner in which the information is presented to learners. It is not productive for learning or completing a task.

Worked examples provide pupils with a step-by-step demonstration of a task. This reduces cognitive load and so is more effective for learning new content than traditional problem-solving tasks. This should include worked example pairs, part-completion problems and incorrect worked examples.



The working memory has two channels – an auditory channel that deals spoken language and written text, and a visual channel that processes images.



We can increase the capacity of the working memory by using both of these channels and presenting information in both visual and auditory formats.

Any non-crucial information creates extraneous load and should be removed. This includes written text and a diagram on the same content, reading aloud written text, or explanations of additional content that detracts from the to-be-learned material.



Extraneous load is caused if learners have to split their attention between multiple sources of information to understand the material being studied. Material should be presented together, for example by ensuring that all diagrams and labels are integrated.



We learn more from words and images than from words alone and so should utilize instructions that combines words and graphics.



Cognitive Load

The Modality Effect

The Split Attention Effect