



## COGNITIVE LOAD THEORY 2.0

Cognitive Load Theory proposes humans have a limited, short term working memory. An unlimited long term memory retains and connects information. Cognitive Load Theory is most applicable when information is new to pupils, complex and they are at a novice stage in their learning. When this is less true the limits of working memory are unlikely to be reached.

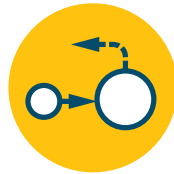
Cognitive Load Theory includes compound and simple effects that can be used to improve the quality of teaching and hence learning. Five higher order compound effects alter the characteristics of other simple cognitive load effects. These compound effects provide underpinning principles that help explain the limits of the simple effects.

## IMPLICATIONS FOR TEACHERS: COMPOUND EFFECTS



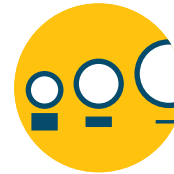
### Element Interactivity Effect

Element interactivity can be altered by incorporating either more or less information depending on the expertise of the learner. Cognitive load is reduced by limiting and sequencing the information available.



### Expertise Reversal Effect

Expert learners have more complex schemas which can be readily transferred to working memory. Instructional procedures and materials designed for novices contain information known by experts unnecessarily adding to cognitive load.



### Guidance-Fading Effect

Over longer educational programmes learners gradually acquire more expertise. This increased expertise makes information and activities required by novices redundant. Instructional methods should change over the duration of a programme.



### Transient Information Effect

Any necessary transient information must be actively retained in working memory for increasing cognitive load. Non-transient information (e.g. a written text/diagrams) ensures all information remains available to the learner and allows for revisiting.



### Self-Management Effect

Learners are taught to apply CLT principles to manage their own cognitive load. For example, when confronted with low-quality learning materials – multiple sources of information – they reorganise them into one integrated resource.