



## Cognitive Load

### Definition

The amount of information that loads the working memory in a learning process. The working memory is the part of the brain that provides temporary storage for new information. It is responsible for processing the information and then integrating it in the long-term memory. The working memory has limited capacity. It can only process and select little information to be integrated in the long-term memory. It is impossible to control what information is selected for processing and long-term storage.

The cognitive load is a very important aspect to be considered while designing a learning process. The information provided to learners must be carefully selected and filtered so as they are confronted only with what is essential. Information that exceeds learners' working memory capacity overwhelms it, compromising the retention of essential elements. A major rule to follow is to clearly identify what is mandatory for the learners to know in order to meet the learning objectives, differentiating it from complementary information. Only information that is necessary to know must comprise the core part of the contents of a learning process to facilitate processing and integration into the long-term memory, therefore increasing retention capacity. Necessary to know information, essential to meet the learning objectives, must form the compulsory study materials. Nice to know information, which complement the learning, should be referred as optional readings, included as additional materials or resources to be consulted by the learners once the core mandatory learning elements are retained.



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## General Guidelines

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1. Remember:
  - The working memory has limited capacity to process and store information
  - There is no control on which information is integrated into the long-term memory
  - The information provided to learners must be carefully selected, avoiding overwhelming the working memory
2. Identify:
  - What is necessary to know to meet the learning objectives
  - The compulsory study materials required to meet the learning objectives
  - What would be nice to know to complement the learning
3. Include what is necessary to know in the compulsory study materials
4. Include what is nice to know as optional or additional study materials
5. Make sure that each lesson in a particular course:
  - Provides reasonable amount of information (pages/slides) and does not overwhelm the working memory
  - Includes reasonable amount of text (pages/slides) and that sentences are short and easy to understand



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