

Measuring Different Types of Cognitive Load

Cognitive load plays an important role in the learning process. There are basically three types of cognitive load, Extraneous Load, Intrinsic Load and Germane Load. There are two types of theories that mentions the effect of each type of load on each other, one is Unitary Theory and the other one is Triarchic Theory, one states that one kind of cognitive load effects other kind of cognitive load.

There are several ways to measure the different types of the cognitive load, one way is to introduce the secondary task (primary task = learning). One experiment used the reaction time to detect the change in the background color in order to measure the Extraneous type of cognitive load, difficulty rating for the Intrinsic Load and exercise solving for the Germane type of cognitive load. [1]

Measuring reaction time does not seem to be a good measure for the Extraneous Load, because reaction time does not depends upon the extra load but on the genetics abilities and also at the trained instincts as well. Difficulty ratings also does not seems to be a good measure because it can be confusing for the statistical purposes. Getting each individual tested on the lesson provided seems to be a good measure for Germane Load.

An animated lesson with text on screen and with text of screen can be used for the measurement of the types of cognitive load. A better measure for the Extraneous Load than reaction time, can be to solve as many arithmetic or algebraic problems in a specific amount of time, and to measure Intrinsic Load, a quiz or test can be used to identify the concepts or symbols or terms that has been mentioned in the lesson. This experiment can also be used to analyse the relationship of different types of cognitive load using statistical correlation analysis.

References

References

- [1] Krista E DeLeeuw and Richard E Mayer. A comparison of three measures of cognitive load: Evidence for separable measures of intrinsic, extraneous, and germane load. *Journal of educational psychology*, 100(1):223, 2008.