



# Multidimensional cognitive load scale for virtual environments

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Cette échelle est une **extension** de l'**échelle de charge cognitive (CLS) de Leppink et al. (2013)**.

Elle permet de mesurer les trois types de charges cognitives (intrinsèque, extrinsèque et essentielle) dans un contexte d'**apprentissage en environnement virtuel**.

Plus précisément, la dimension "charge extrinsèque" de la CLS est divisée en trois sous-échelles :

- Charge extrinsèque relative à **l'instruction**
- Charge extrinsèque relative à **l'interaction**
- Charge extrinsèque relative à **l'environnement**

*Andersen, M. S., & Makransky, G. (2021). The validation and further development of a multidimensional cognitive load scale for virtual environments. Journal of Computer Assisted Learning, 37(1), 183-196.*

<https://onlinelibrary.wiley.com/doi/epdf/10.1111/jcal.12478>

## 1. The topic covered in the simulation was very complex.

Évaluation

Not at all the case  0  1  2  3  4  5  6  7  8  9  10 Completely the case

## 2. The simulation covered procedures that I perceived as very complex.

Évaluation

Not at all the case  0  1  2  3  4  5  6  7  8  9  10 Completely the case

## 3. The simulation covered concepts and definitions that I perceived as very complex.

Évaluation

Not at all the case  0  1  2  3  4  5  6  7  8  9  10 Completely the case

## 4. The instructions and/or explanations used in the simulation were very unclear.

Évaluation

Not at all the case  0  1  2  3  4  5  6  7  8  9  10 Completely the case

## 5. The instructions and/or explanations used in the simulation were, in terms of learning, very ineffective.

Évaluation

Not at all the case  0  1  2  3  4  5  6  7  8  9  10 Completely the case

**6. The instructions and/or explanations used in the simulation were full of unclear content.**

Évaluation

Not at all the case  0  1  2  3  4  5  6  7  8  9  10 Completely the case

**7. The interaction technique used in the simulation was very unclear.**

Évaluation

Not at all the case  0  1  2  3  4  5  6  7  8  9  10 Completely the case

**8. The interaction technique used in the simulation was, in terms of learning, very ineffective.**

Évaluation

Not at all the case  0  1  2  3  4  5  6  7  8  9  10 Completely the case

**9. The interaction technique used in the simulation made it harder to learn.**

Évaluation

Not at all the case  0  1  2  3  4  5  6  7  8  9  10 Completely the case

**10. The interaction technique used in the simulation was difficult to master.**

Évaluation

Not at all the case  0  1  2  3  4  5  6  7  8  9  10 Completely the case

**11. The elements in the virtual environment made the learning very unclear.**

Évaluation

Not at all the case  0  1  2  3  4  5  6  7  8  9  10 Completely the case

**12. The virtual environment was, in terms of learning, very ineffective.**

Évaluation

Not at all the case  0  1  2  3  4  5  6  7  8  9  10 Completely the case

**13. The virtual environment was full of irrelevant content.**

Évaluation

Not at all the case  0  1  2  3  4  5  6  7  8  9  10 Completely the case

**14. It was difficult to find the relevant learning information in the virtual environment.**

Évaluation

Not at all the case  0  1  2  3  4  5  6  7  8  9  10 Completely the case

**15. The simulation really enhanced my understanding of the topics covered.**

Évaluation

Not at all the case  0  1  2  3  4  5  6  7  8  9  10 Completely the case

**16. The simulation really enhanced my knowledge and understanding of lab safety.**

Évaluation

Not at all the case  0  1  2  3  4  5  6  7  8  9  10 Completely the case

**17. The simulation really enhanced my understanding of the procedures covered.**

Évaluation

Not at all the case  0  1  2  3  4  5  6  7  8  9  10 Completely the case

**18. The simulation really enhanced my understanding of concepts and definitions.**

Évaluation

Not at all the case  0  1  2  3  4  5  6  7  8  9  10 Completely the case