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# Background music kills learning

***Why music and background sounds are bad for learning?***

Using background music into e-Learning lessons is not only not useful, but also potentially harmful.

Like excessive content, irrelevant decorative graphics and verbose explanations, also **background music increases cognitive load**. In reality, every mental process (perceptual or thought) increases cognitive load. When we participate in a training course, working memory needs to process new information, but it has a limited capacity: it can not "enter" all the new material!

The disturbing elements (such as music) make the perception of key contents of the lesson more difficult, disturb the process of storing information in the working memory and consequently their retention. Ultimately, they **interfere with the learning process, penalizing it**.

A specific research on background music (Roxana Moreno and Richard Mayer) has tested whether the addition of sounds (background music or sounds) improves or damages learning in messages with multimedia instructions (animations about lightning and hydraulic braking) . The results of this studies shows that unnecessary sounds during the course decrease the performance of the learning test.

The reason? Music (even at low volume) adds a cognitive load that interferes in a harmful way with the mental processes of learning and memorizing. As the two authors wrote, "hearing additions can overload the student's auditory work memory".

According to the researchers, the reasons why music and background sounds negatively affect learning goes through two principles:

- **Entertainment**: many expect to involve the learners more by adding music and sounds to the educational content. Children show more attention to TV programs that use sound effects and music. However, children's attention while watching television is very different from that of adults during educational presentations: children pay intermittent attention and the purpose of the sounds is to attract their attention, not to help them learn.
- **Consistency**: according to the coherence principle, we should eliminate all non-essential information in order to minimize harmful implications on cognitive resources during the learning process.

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