

The Coherence Principle

Theory

The coherence principle (also called *seductive details*¹⁾ effect) claims that extraneous material that may be interesting or motivating but is irrelevant for learning objectives generally wastes learning resources and **hinders learning of important material**. This assumption is grounded in the fact that human cognitive resources are limited. Still, [cognitive load theory](#) predicts this effect will only occur if the cognitive load imposed by important learning material is high enough.²⁾

Seductive details can be³⁾:

- relevant or irrelevant with respect to the learning goals, and
- redundant or non-redundant.

Practice

Seductive details can appear in virtually any format, but most often as text.

Research status

A number of studies on the effect of seductive details have demonstrated:

- **negative effects** on learning of important material⁴⁾
- **lack of negative effects** on learning of important material.⁵⁾

Surprisingly, a recent study even found a large **increase in learning** due to seductive details.⁶⁾ Possible explanations offered for this phenomenon are:

- low cognitive load imposed by instructional material (**free cognitive resources**) in combination with
 - increase in **motivation** and cognitive engagement caused by interesting seductive details
 - **enhanced mental model** due to additional information which was successfully processed

¹⁾

Garner, Ruth, Mark G. Gillingham, and C. Stephen White. Effects of 'Seductive Details' on Macroprocessing and Microprocessing in Adults and Children. *Cognition and Instruction* 6, no. 1: 41. 1989.

²⁾ ³⁾ ⁶⁾

Park, Babette, Roxana Moreno, Tina Seufert, and Roland Brünken. Does cognitive load moderate the seductive details effect? A multimedia study. *Computers in Human Behavior* 27, no. 1: 5-10. January 2011.

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For details see: Park, Babette, Roxana Moreno, Tina Seufert, and Roland Brünken. Does cognitive load

moderate the seductive details effect? A multimedia study. *Computers in Human Behavior* 27, no. 1: 5-10. January 2011. Mayer, Richard E, Emily Griffith, Ilana T N Jurkowitz, and Daniel Rothman. "Increased Interestingness of Extraneous Details in a Multimedia Science Presentation Leads to Decreased Learning." *Journal of Experimental Psychology. Applied* 14, no. 4: 328-339. December 2008.

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For details see: Park, Babette, Roxana Moreno, Tina Seufert, and Roland Brünken. Does cognitive load moderate the seductive details effect? A multimedia study. *Computers in Human Behavior* 27, no. 1: 5-10. January 2011.

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