

# Seductive details inhibit learning

March 19 2020, by Sara Zaske

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When teachers use a funny joke, a cat video or even background music in their lessons, it can keep students from understanding the main content.

These so-called "seductive details," information that is interesting but

irrelevant, can be detrimental to learning, according to a meta-analysis by Washington State University researchers published in the journal *Educational Psychology Review* recently. The analysis of 58 studies involving more than 7,500 students found that those who learned with seductive details performed lower on learning outcome measures than those who learned without the extraneous information.

"If you have an irrelevant piece of information, and it is something that is interesting, students tend to perform worse," said Kripa Sundar, the lead author on the paper that is based on her dissertation from WSU's College of Education. "There are multiple hypotheses on why that happens, but the simplest is that students' attention is now diverted toward that irrelevant information, and they're spending too much time trying to understand what that seductive detail is instead of the content matter."

Sundar and her co-author Olusola Adesope, WSU professor of educational psychology, found that the effect was worse when the seductive detail was placed next to informative and relevant diagrams, or when it was constant, such as a static joke or image on a screen. Including seductive details was also more detrimental on paper than in digital formats, and more prominent in certain subjects, such as social studies and natural sciences.

The analysis supports the coherence principle in multimedia learning which recommends that all [relevant information](#) needs to be placed together and unnecessary information should be excluded.

Good detail that helps engage students is still important, Sundar said. It's just important that those details are pertinent to the topic.

"This does not mean that learning shouldn't be fun," she said. "We just might need to exert a little more effort into thinking how we can make

the learning activity itself a lot more engaging and interesting in a way that contributes toward the educational objective."

Humans tend to connect details to big concepts, so good details that teachers include can be helpful in having students recollect a certain idea, but if detail is included that is not useful but very alluring, it can potentially trigger a different line of thought.

For example, if, during a science lesson about how lightning forms, the teacher talks about how a freak lightning strike killed 16 people at a church in Rwanda in 2018, the students can easily be derailed by that very specific, dramatic story.

The study also calls for further research into this phenomenon. Even though the analysis was broad, Sundar noted that most studies used short learning sessions of only six to 12 minutes when a typical class is 55 minutes long.

She pointed to two other aspects for further investigation: the role of prior knowledge of a subject, which may allow a learner to better distinguish relevant from irrelevant information, and the potential positive effect seductive details may have on students' emotions. For instance, something distracting like a joke or music might lessen the anxiety many people feel about learning math.

"There may be some trade-offs between the potential emotional benefit and the detrimental effects of seductive details that we're seeing on learning," said Sundar. "Understanding that would enable us to make strong recommendations for practice because teachers are teaching children, and they're human."

Adesope pointed out that the findings only reflect cognitive outcomes and further research should look into other aspects that may balance

these effects.

"We are currently investigating the degree to which the hypothesized emotional benefits may compensate for the cognitive disadvantages of learning with seductive details," said Adesope.

**More information:** NarayanKripa Sundararajan et al, Keep it Coherent: A Meta-Analysis of the Seductive Details Effect, *Educational Psychology Review* (2020). [DOI: 10.1007/s10648-020-09522-4](https://doi.org/10.1007/s10648-020-09522-4)

Provided by Washington State University

Citation: Seductive details inhibit learning (2020, March 19) retrieved 18 April 2024 from <https://phys.org/news/2020-03-seductive-inhibit.html>

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