

The Signaling Effect

The signaling effect presents the increase in learning outcomes due to guiding and promotion of attention to relevant information. Signals are based on natural attention attractors like movement, contrast or sound. In multimedia this effect can also be achieved through various methods like¹⁾:

1. enumeration, → arrows, underlining,
2. **bold text**, *italic text*, **coloring**,
3. summaries or overviews.

A recent research²⁾ has confirmed and attempted to explain the signaling effect using recorded eye movements data of the experiment participants. Some of the conclusions of this and similar studies concerning the signaling effect are:

- Signaling can guide attention to relevant information, which reduces cognitive resources normally assigned for search of information³⁾
- Eye-tracking studies confirmed that signaling results in more attention devoted to relevant information⁴⁾
- Most studies⁵⁾ haven't confirmed signaling effect on retention tests⁶⁾, but rather on transfer or matching tests
- These results suggest signaling facilitates deeper processing or meaningful learning
- In cases when signaling is used, time for finding information is reduced, but duration of time spent on this information increases when compared to no signaling

¹⁾ , ²⁾ , ³⁾ , ⁴⁾

Ozcelik, Erol, Ismahan Arslan-Ari, and Kursat Cagiltay. Why does signaling enhance multimedia learning? Evidence from eye movements. *Computers in Human Behavior* 26, no. 1: 110-117. January 2010.

⁵⁾

For example see: Ozcelik, Erol, Ismahan Arslan-Ari, and Kursat Cagiltay. Why does signaling enhance multimedia learning? Evidence from eye movements. *Computers in Human Behavior* 26, no. 1: 110-117. January 2010., [signaling_effect](#)

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Author of this text believes this might be due to to short experiments

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