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Citation for published version (APA):

Balslev, T., Jarodzka, H., Holmqvist, K., Nyström, M., Scheiter, K., Gerjets, P., & Eika, B. (2012). *Enhancing learners' visual search in video cases*. Paper presented at International Child Neurology Congress, Brisbane, Australia.

Document status and date:

Published: 28/05/2012

Document Version:

Peer reviewed version

Document license:

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Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
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- The final published version features the final layout of the paper including the volume, issue and page numbers.

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D120546

Enhancing learners' visual search in video cases

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Objective: Learning about common neurological symptoms, like movement disorders or epileptic seizures, is complicated by symptoms being periodic or episodic. Making a clinical diagnosis not only requires knowledge about diagnoses but also the skill to visually search for signs and symptoms and to interpret these observations. We know that experienced clinicians are superior in terms of visual search and diagnostic accuracy. The objective of this study was to determine if modelling of the experts' eye movements enhanced learners' visual search or interpretation of signs.

Design: Prospective controlled study.

Method: Medical students were randomized to one of three conditions. On an individual basis, the medical students saw video cases while listening to a recording of the expert explaining how he was making the diagnosis. In the first experimental condition, the features he paid attention to were highlighted with a moving circle (circle condition). In the second experimental condition, the features he did not attend to were blurred (spotlight condition). In the control condition, no highlighting or blurring was used.

Results: Sixty medical students were recruited, 20 to each condition. Data showed that a spotlight guided the students' attention better to the relevant features compared to guidance of visual attention in a circle fashion or no visual attention guidance at all. The study also showed that guiding attention in a spotlight fashion improved subsequent visual search in three new video cases and enhanced the participants' performance in interpreting symptoms in video cases compared to the other two conditions.

Conclusion: This study confirms the value of guidance of visual attention when teaching with video cases.