ICLTC 2021

APPLICATIONS ACROSS THE DISCIPLINES

Segmentation effect and eye movement modelling examples in learning renal physiology

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Attention guided by an Eye Movement Modelling

- The Eye Movement Model prompts participants to look at the same items as the model, it allows learners to look at the important items. (Jarodzka et al., 2013; Chisari et al.,2020).
  - No effect on learning
  - Or specific to low prior knowledge
- Transient information effect / multimedia learning (Leahy & Sweller, 2016).

Segmentation

- ✓ Segmenting content improves learning and decreases the depletion of attentional resources (Chen et al., 2018).

Problem

- What is the effect of time and guidance using an Eye Movement Model on learning ?

jcd

Variables

- Dependent variable : Learning gain
- Independent variable 1 : Pause vs No pause
- Independent variable 2 : Eye Movement Model vs Without Eye Movement Model
- Independent variable 3 : Low prior knowledge vs High prior knowledge
  - jcd

Hypotheses

- H1 : Videos with insertion of pauses would allow better learning than videos without pause time.

- H2 : Videos with eye movement model would allow better learning than videos without an eye movement model.

Participants and materials

195 medical students, 2^{nd} year

- Content and recording of eye movements using eye-tracking.
- Insertion of pauses
  - 25% of the original video
  - 62 pauses of 5.15 seconds.

	With Eye Movement Model	Without Eye Movement Model
Pauses	43 students	51 students
Without pauses	46 students	55 students

Procedure

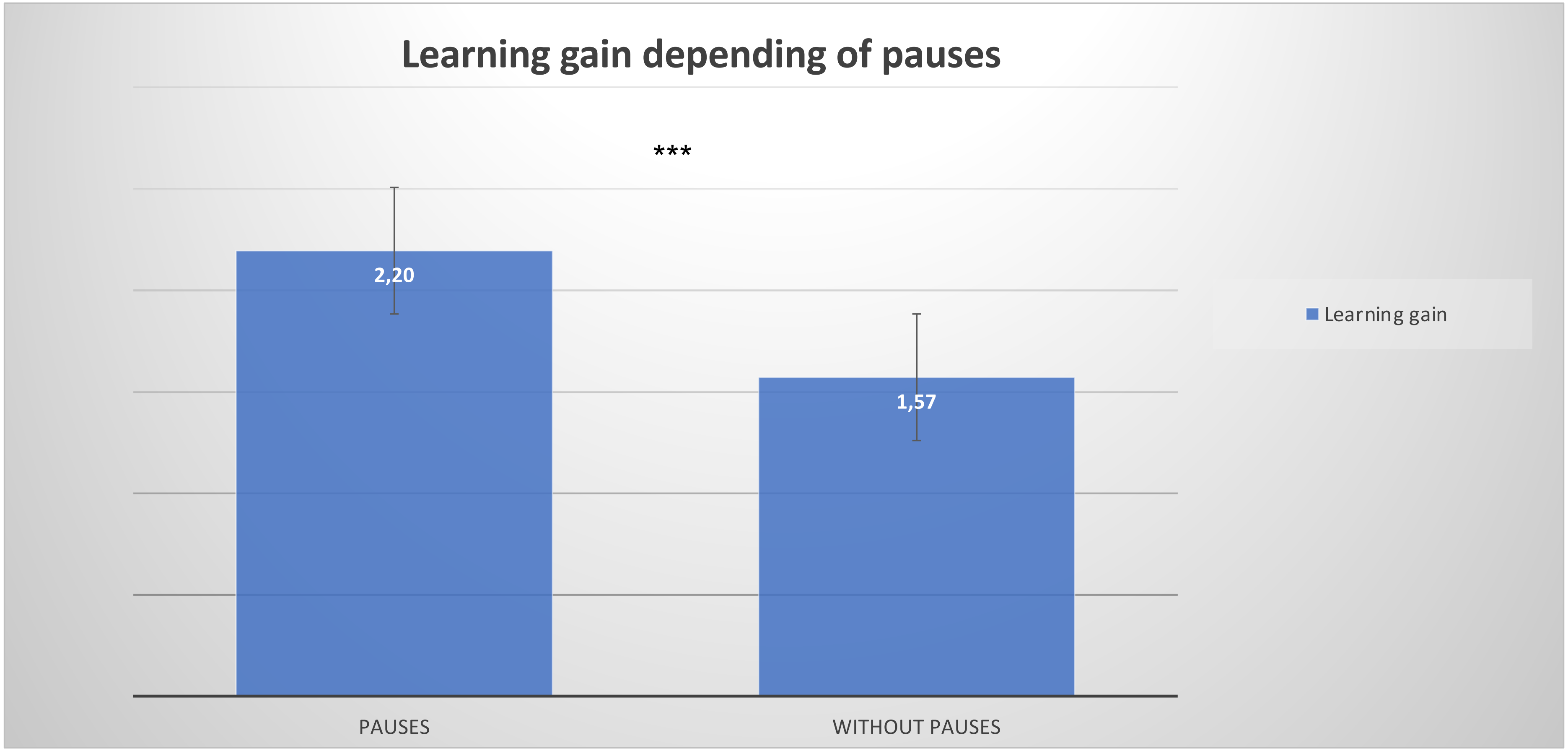
Pré-test

Video (randomly assigned)

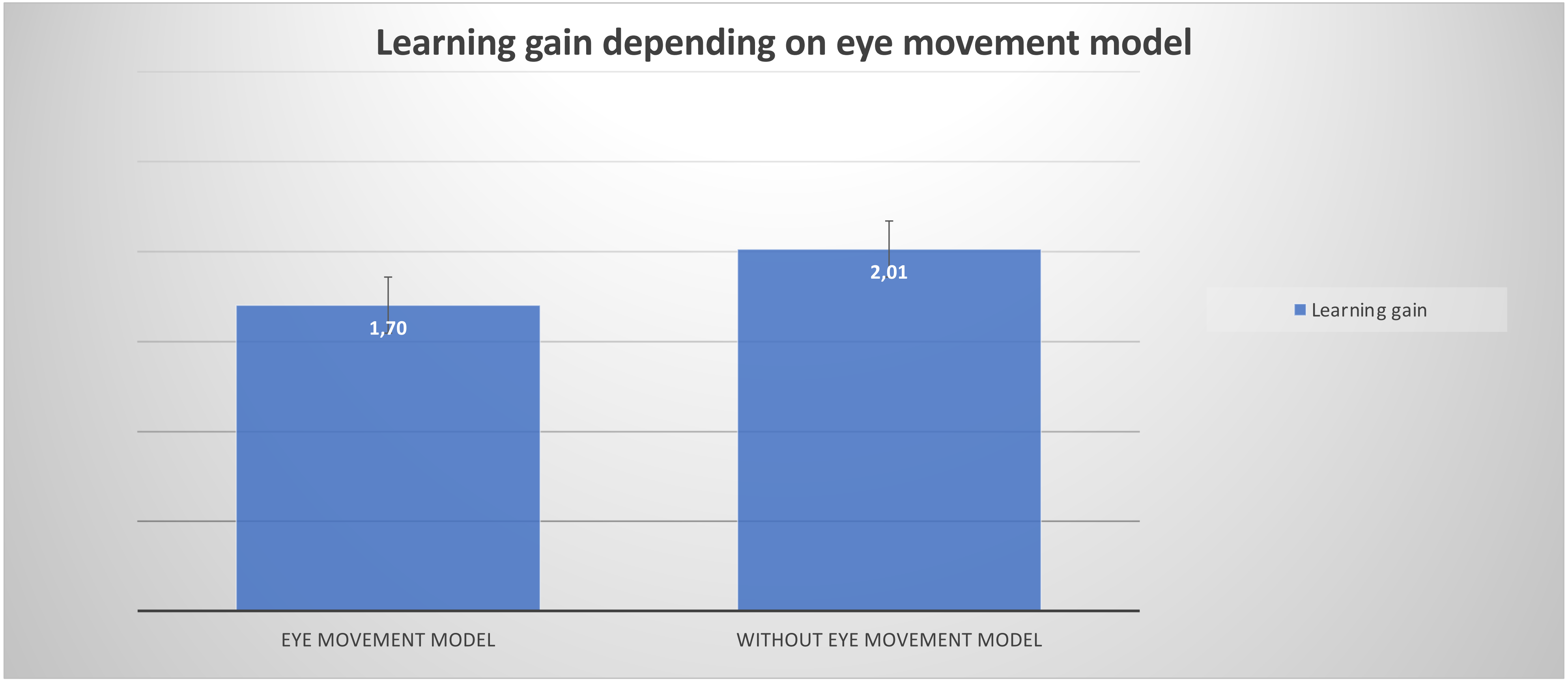
Subjective Cognitive Load (Leppink et al., 2013)

Posttest

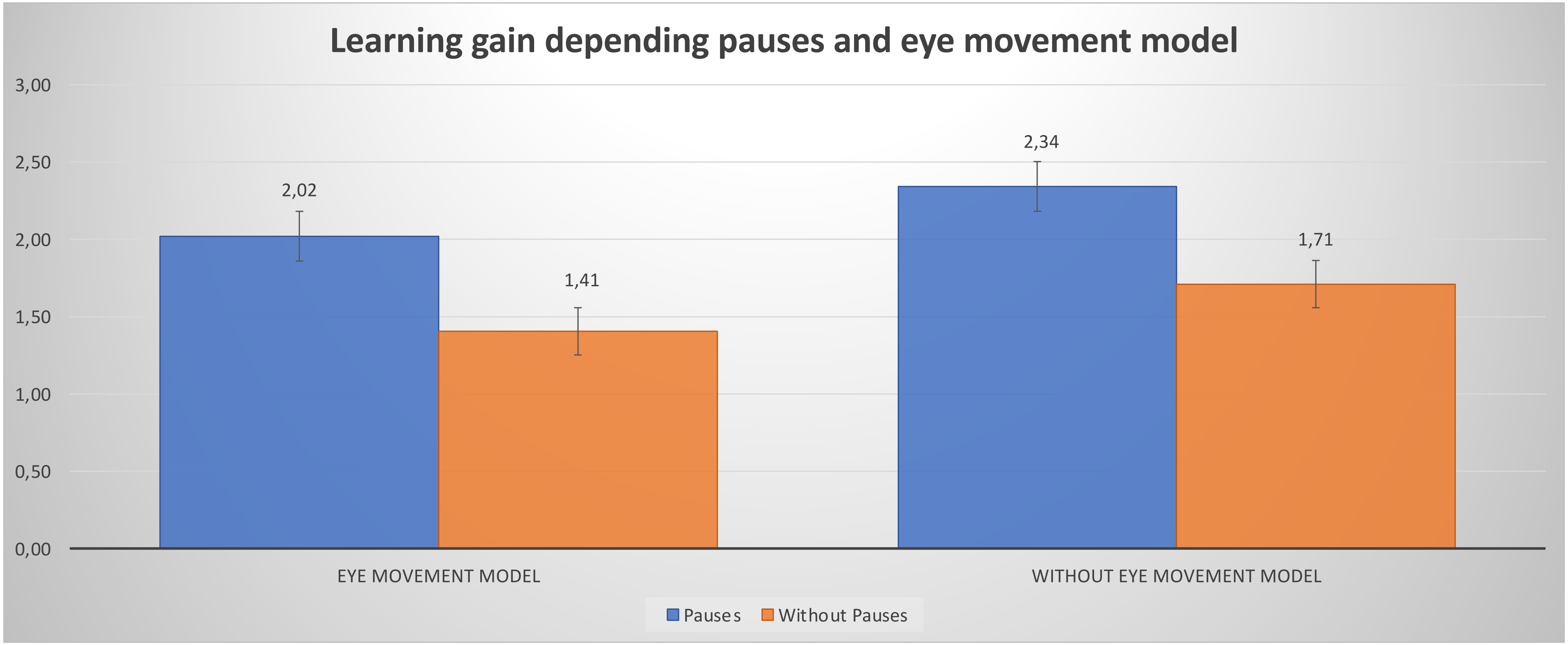
Results : Main effect of pauses



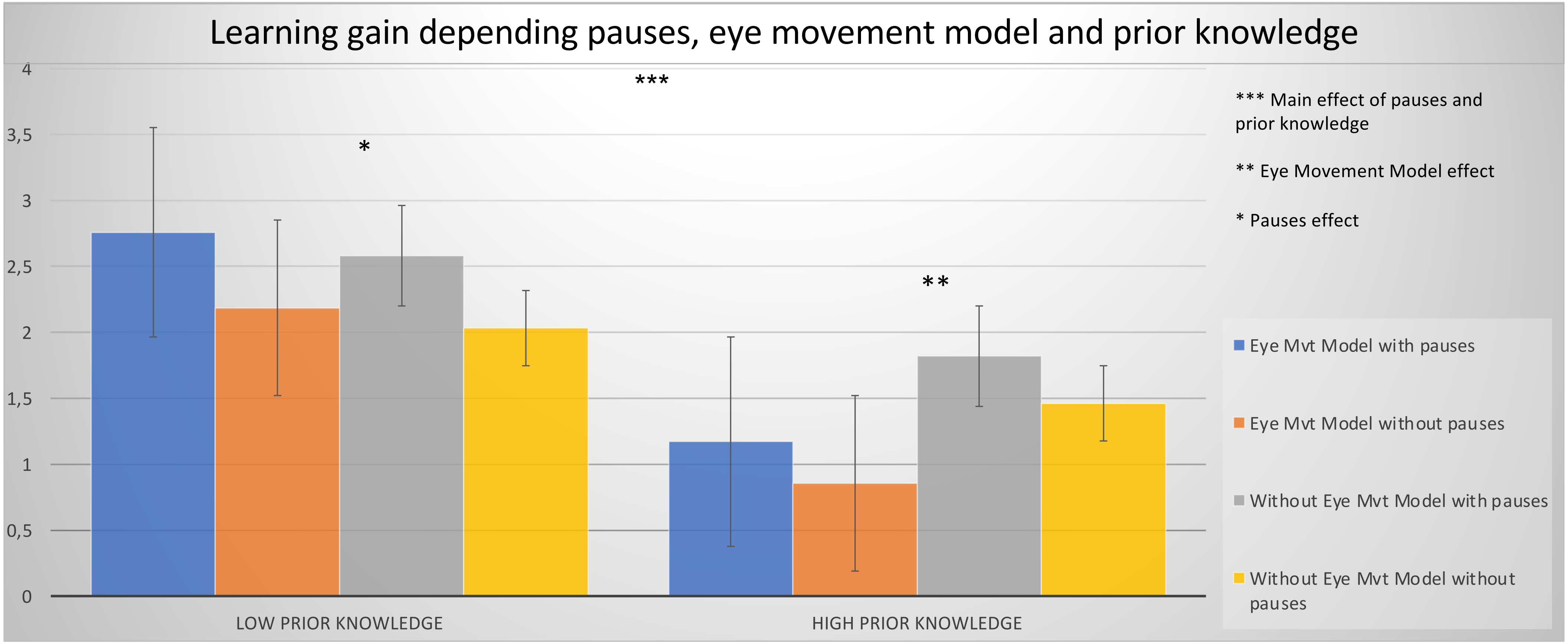
No main effect of Eye Movement Model



No interaction effect between pauses and Eye Movement Model



Effect of students prior knowledge on learning gain



Discussion

- Possible explanation for the mixed results regarding the effectiveness of Eye Movement Model.
- Prior knowledge and pauses in learning video

- Interesting prospects for other types of more visual content.

Thank you !