



## Supporting middle school students' consideration of sources and processing of divergent arguments in videos

Franck Amadieu, Colin Lescarret, Valérie Lefloch, Jean-Christophe Sakdavong

### ► To cite this version:

Franck Amadieu, Colin Lescarret, Valérie Lefloch, Jean-Christophe Sakdavong. Supporting middle school students' consideration of sources and processing of divergent arguments in videos. 10th Japanese-French - Frontiers of Science (JFFoS) Symposium!, Jun 2022, Kyoto, Japan. hal-04331025

**HAL Id: hal-04331025**

**<https://hal.science/hal-04331025>**

Submitted on 8 Dec 2023

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

# Supporting middle school students' consideration of sources and processing of divergent arguments in videos

Franck Amadieu, Colin Lescarret, Valérie LeFloch, Jean-Christophe Sakdavong (University of Toulouse, CNRS, UMR5263 Cognition, Langues, Langage, Ergonomie)

## Research questions

- How students (12-13 years old) process videos presenting conflicting arguments from different sources?
- What activates with videos to support processing of sources and divergent arguments?

IV1 : **Sources of different expertise:** scientific, technician, nonspecialist

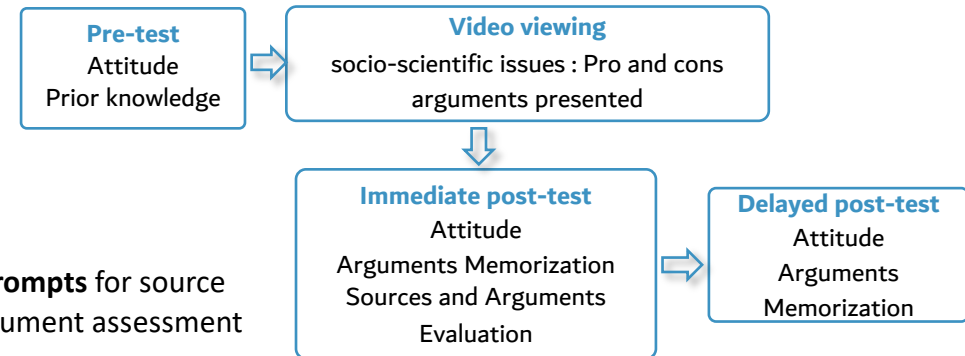


IV2 : Students' **prior attitudes towards the issue** (negative, neutral, positive)

## Main hypotheses:

- Students should report a polarization of their attitude towards the issue following the viewing of the videos, especially for students with strong prior attitude. Students' attitudes should lead to better attention and processing to arguments consistent with their initial attitudes.
- Students should recall and consider arguments congruent with their attitude more convincing than incongruent arguments (Richter & Maier, 2017)
- Prompts (Brante, & Strømsø, 2018) and sorting task of videos (Nussbaum, 2008) should support integration of divergent arguments and consideration of sources' expertise.

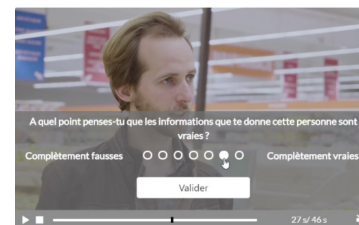
## Procedure of 4 studies (600 participants each)



IV 3 : **Prompts** for source and argument assessment



How much this person seems to be an expert of the issue?



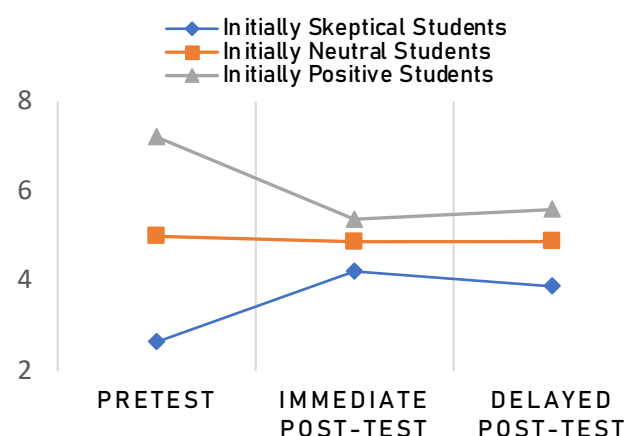
How true do you think this information is

IV 4 : **Sorting task** of videos according to the arguments

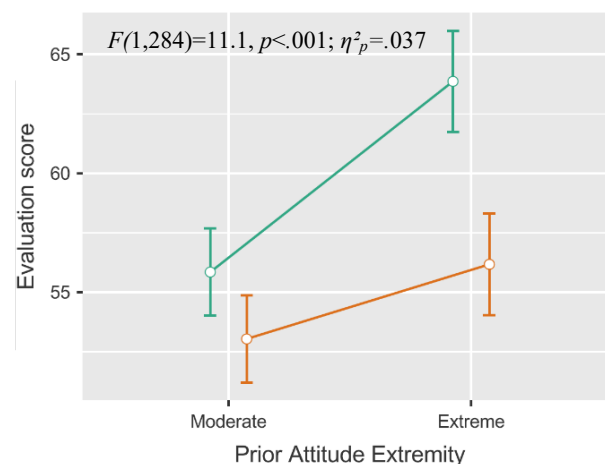


## Results: How middle-school students (12-13 years old) process expertise and arguments

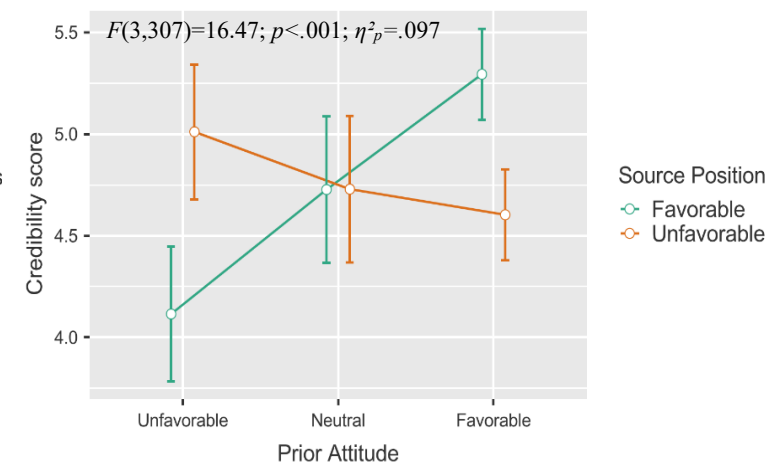
### Moderation of extrem attitudes



### How convincing where the arguments



### Credibility scores of the sources



## Results: Activities supporting better processing of sources and arguments

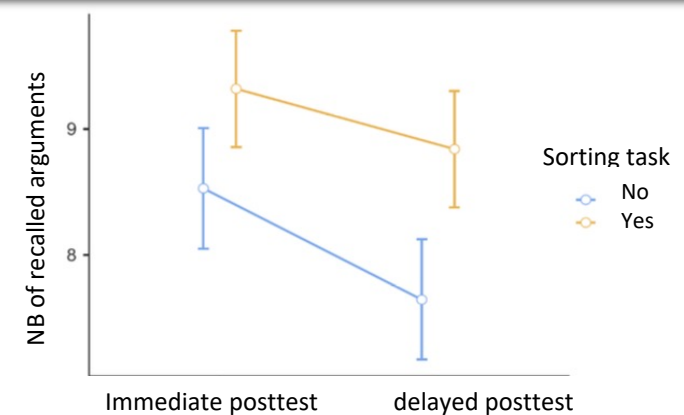
**No positive effect of the prompts except for the student's argumentation at the post-test:** the argument of expertise of the source is the most evoked

### Positive effects of the videos sorting task on:

- The number of arguments used in the students' argumentation
- The recall scores of the arguments from the videos one week later

## Conclusion:

- Seventh graders can easily change their attitudes from viewing of videos without considering the credibility of the information sources.
- Nevertheless, activities such argument-based sorting of videos and prompts can support better processing of sources and arguments
- More investigations with a longitudinal approach are required



## References:

- Brante, E. W., & Strømsø, H. I. (2018). Sourcing in text comprehension: A review of interventions targeting sourcing skills. *Educational Psychology Review*, 30(3), 773-799.
- Nussbaum, E. M. (2008). Using argumentation vee diagrams (AVDs) for promoting argument-counterargument integration in reflective writing. *Journal of Educational Psychology*, 100(3), 549.
- Richter, T., & Maier, J. (2017). Comprehension of multiple documents with conflicting information: A two-step model of validation. *Educational Psychologist*, 52(3), 148-166.