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## Design of Online Lecture Videos by Non-Native English Speaking (NNES) Instructors to Promote Critical Learning

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## INTRODUCTION

- NNES instructors receive lower course evaluations and are often criticized for their accents (Rubin, 1992; Subtirelu, 2015).
- Questions:
  - Could the criticisms of NNES be explained by Cognitive Load Theory (Mayer et al., 2003; Sweller, 2019)?
  - Could the problem be addressed by reducing cognitive load in an online lecture video setting?

## METHOD

### Design & Materials (n=56)

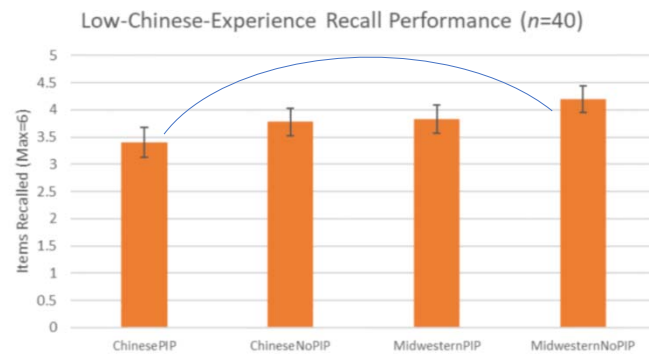
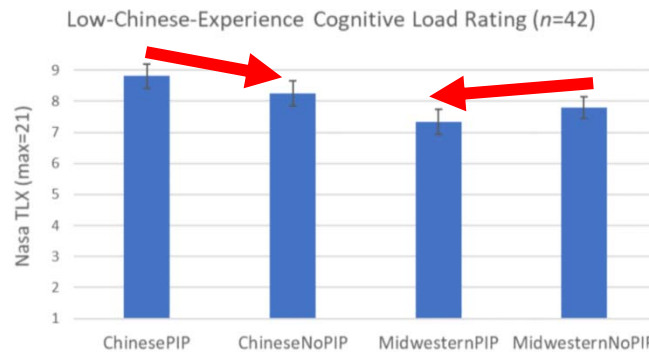
A 2X2 within-group design: Accent (Foreign Chinese Accent vs. Midwest American Accent); Face (Showing Picture-in-picture face or Not showing face). Data were analyzed separately for high vs. low Chinese-language experience participants (HCL vs. LCL).

### Procedure

- 1.) Participants watch four segments of lecture videos on airplane engineering (counter-balanced)
- 2.) Participants completed three free-recall and three cued-recall questions after each video
- 3.) Participants completed a NASA-TLX questionnaire to gauge cognitive load after each video
- 4.) Participants completed Chinese language bias survey and demographics information at the end.

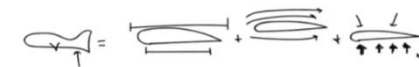
## RESULTS

1. HCL learners had higher cognitive load with a Chinese accent, but this did not affect recall performance. No effect of instructor presence was found.
2. An interaction effect was observed with LCL learners' cognitive load.
3. Instructor presence had a significant effect on LCL learners' recall performance.



## DISCUSSION

1. Facial cues trigger increased effort in comprehension with unfamiliar-accented speech but not familiar-accented speech (Grey et al., 2020).
2. The increased effort could have caused increased cognitive load and worse recall performance.
3. The increased effort and worse learning outcome could have contributed to the negative attitude toward NNES instructors.
4. **Recommendation 1:** NNES instructors might want to refrain from using PIP video lecturing style.
5. **Recommendation 2:** PIP video lecturing design is inconsequential to NES instructors.
6. **Recommendation 3:** Being sensitive to the cognitive demand placed on students is key to the design of online course materials. Sometimes more effort causes better learning (Morris & Chen, 2020)



## REFERENCES

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- Morris, T. W., & Chen, H-T. (2020). The influence of voice on pedagogical agent's persona and recall performance. Proceedings of the 2020 International Annual Meeting of the Human Factors and Ergonomics Society, Chicago, IL: The Human Factors and Ergonomics Society.