Exploring Pre-Service Teachers’ Perceived Cognitive Load Levels on Various Instructional Methods

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Introduction

- Instructors use non-theoretical methods

- Instructors “do not [consider] the limitations of human cognitive architecture” (Schnotz et al, 2007)

- “Cognitive load theory…a stronger tool for instruction to acquire domain expertise” (Rikers et al, 2004)

- Creation of CAP-TV
Research Question

- Method with the least/greatest perceived cognitive load?

- Perceived cognitive load factor predicting teaching performance?

- Keywords:
  - Pre-Service Teaching Performance
  - Cognitive Load Theory
  - Learning

- **Hypothesis:** lowest perceived cognitive load and high performance for CAP-TV
Methods

- Conditions:
  - Practitioner-Friendly Article (N = 41)
  - Lecture (N = 45)
  - CAP-TV (N = 46)

- (1 submission) Submit 10 minutes self-recorded teaching video

- NASA -Task Load Index (6 factors)

- 2 raters of video
  - > .7 inter-rater reliability (10% co-coded)
Perceived Cognitive Load

- Lecture vs. Article: > .05
- CAP-TV vs. Article: < .05
- Lecture vs. CAP: < .05
Frustration: $r = -0.48$

Mental, Physical, Temporal, Perceived Performance, and Effort: $r = < |.35|$

(Domains represent perceived cognitive levels)
So What?

- CAP-TV: effective learning tool
  - Greatest teaching performance/implementation
  - Statistically significant differences between groups
  - Highest perceived mental demand on CAP-TV
Future Research

- Over than 1 week video submission + CAP-TV
- Interactive CAP-TV vs. Non-Interactive CAP-TV
Acknowledgements

- Dr. Michael Kennedy
- John Romig
- SURP (Summer Undergraduate Research Program)
  - Institute of Education Sciences, U.S. Department of Education
  - Leadership Alliance
  - UVA Graduate Student Diversity Office

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