

# Time Pressure and Cognition in Mobile Interface

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## Background

Mobile device usage in education is prevalent ⚡

**63%** of undergrads claimed a smartphone benefited academic purposes (Tossel et. al, 2015)

**76%** of undergrads used apps to access educational information (Bomhold, 2013)

Why conduct further research? ⚡

⚡ **Time Constraints** and their negative impact on cognitive task performance (Onwuegbuzie et. al, 1995)

⚡ **Cognitive Load** and the negative effects of cross process stimulation (Meyer, 2013)

⚡ **Research Question** Do different battery presentations induce the effects of cognitive load and time constraints while completing a memory task on a mobile device?

## Results

Our Hypotheses ⚡

⌚ Hypotheses of which conditions would result in greater task times.

### Main Effect 1

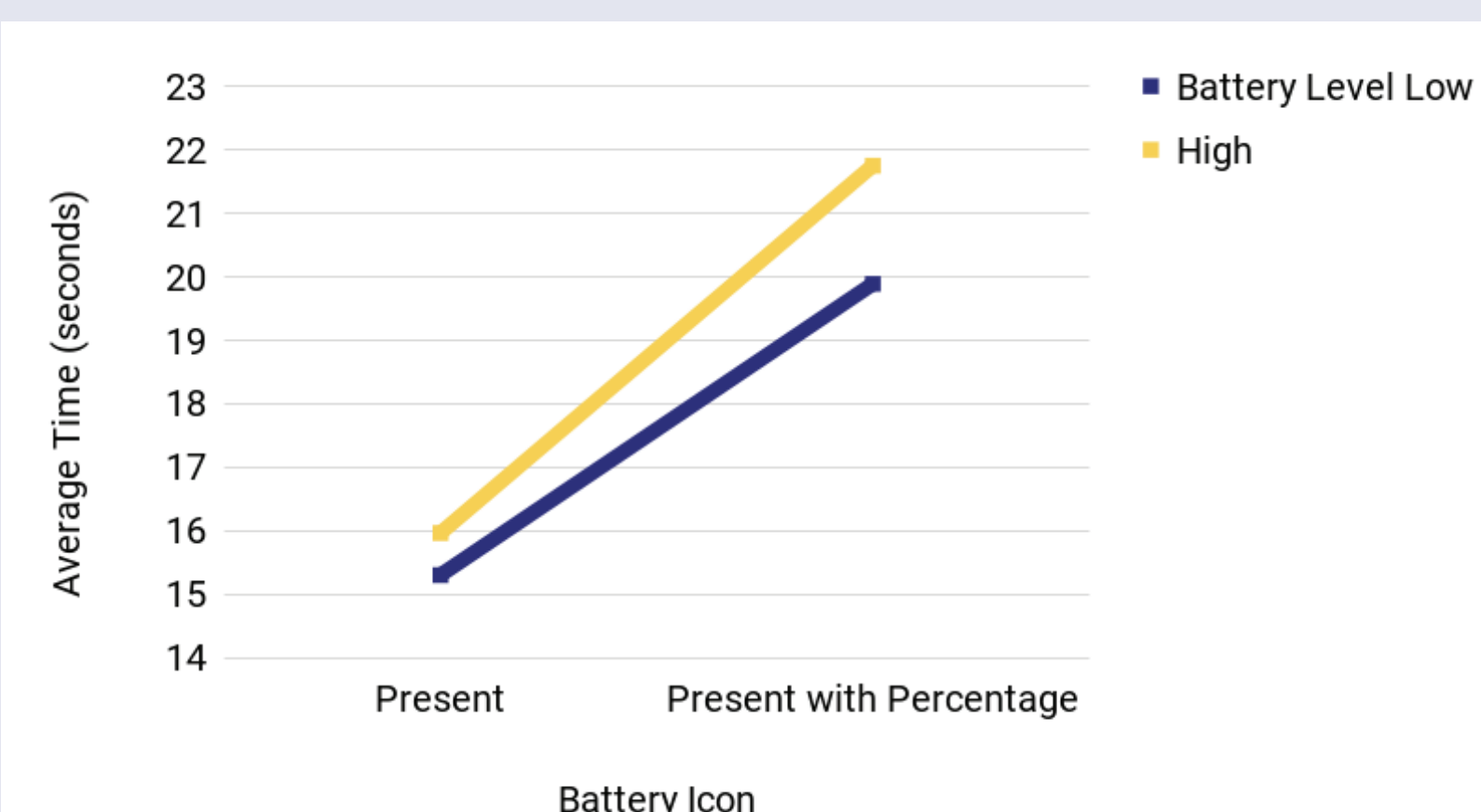
Present w/ Percent > Present  
 $F(3, 16) = 1.78, p = .20$

### Main Effect 2

Low > High  
 $F(3, 16) = .10, p = .75$

### Interaction Effect

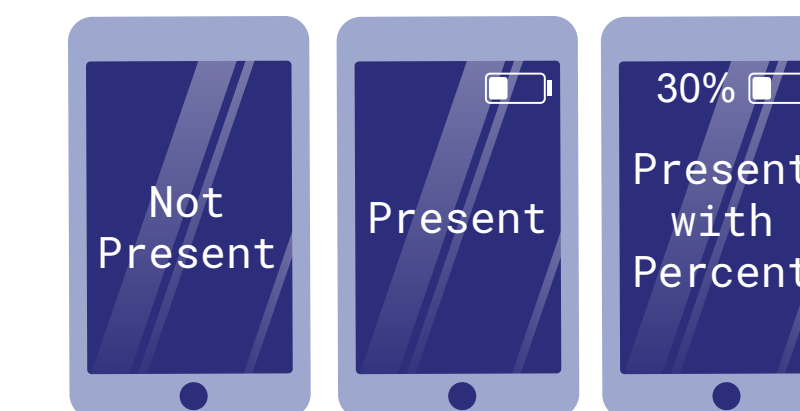
Present w/ Percent & Low > Present & High  
 $F(3, 16) = .02, p = .88$



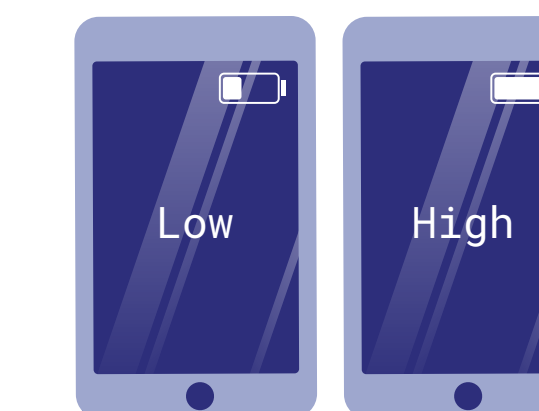
## Method

Variables ⚡

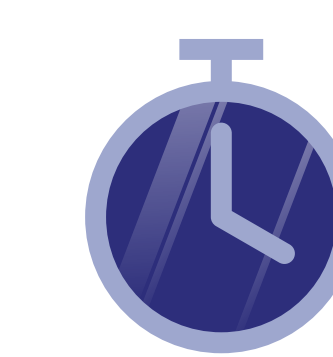
IV1 Battery Icon



IV2 Battery Level



DV Time to complete a memory task



Participants played a matching game on Quizlet based on a deck of SAT terms we constructed for the study.

Method ⚡



## Discussion

What are possible reasons for no significant results? ⚡

⚡ **Make conditions more extreme**

More extreme → Bigger effect

⚡ **Increase personal concern**

Lab equipt. → no personal stake

⚡ **Increase impact of task**

Impact → motivated to finish

⚡ **Increase length of task**

Longer task → worry over battery

⚡ **Manipulation check**

Stress didn't differ by battery - no effect?

Future research ⚡

1 Run with longer tasks

2 Align with participant demographics (ex; iPhone vs. Android)

3 Incentivize completion with deceit (ex; credit only with study completion)