

# Study 2 Perception Means

## Cognitive Awareness & Study Approach Decision Making

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*Load Packages*

```
library(psych)
library(tidyverse)
```

```
## — Attaching core tidyverse packages — tidyverse 2.0.0 —
## ✓ dplyr      1.1.2      ✓ readr      2.1.4
## ✓ forcats    1.0.0      ✓ stringr   1.5.0
## ✓ ggplot2     3.4.2      ✓ tibble     3.2.1
## ✓ lubridate  1.9.2      ✓ tidyr      1.3.0
## ✓ purrr      1.0.1
## — Conflicts — tidyverse_conflicts() —
## * ggplot2::%>%() masks psych::%>%()
## * ggplot2::alpha() masks psych::alpha()
## * dplyr::filter() masks stats::filter()
## * dplyr::lag() masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

*Disable Scientific Notation*

```
options(scipen = 999)
```

## Study 2 Set Up

*Read in Data*

```
study2 <- read.csv("study2-extendedtest-final.csv")
# Blocked -> Interleaved (rows 2-189)
# Interleaved -> Blocked (rows 190-379)
```

*Variables of Interest*

Mental Effort (X)

Familiarity/Habits (X)

Perceived Learning (M)

Final Strategy (Y)

*Blocked Averages*

**## Mental Effort**

```
study2$effort_blocked <- ((study2$TiredBlocked + study2$MentallyExhaustingBlocked +
  study2$DifficultBlocked + study2$BoringBlocked) / 4)
summary(study2$effort_blocked) # mean of 3.14, less mentally effortful
```

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    1.000   2.250   3.000   3.137   4.000   6.000
```

**## Perceived Learning**

```
study2$learn_blocked <- ((study2$RememberAnswersBlocked + study2$MemoryAnswersBlocked +
  study2$HelpingToLearnBlocked + study2$LearnAnswersBlocked) / 4)
summary(study2$learn_blocked) # mean of 3.36, perceive more learning
```

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    1.000   2.750   3.250   3.359   4.000   6.000
```

**## Familiarity/Habits**

```
study2$habits_blocked <- ((study2$ClassStructureBlocked + study2$FamiliarMethodBlocked +
  study2$NewExerciseBlocked + study2$MatchHabitsBlocked) / 4)
summary(study2$habits_blocked) # mean of 3.17, more familiar/habitual
```

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.    NA's
##    1.250   2.500   3.000   3.167   3.750   6.000         2
```

**Interleaved Averages****# Mental Effort**

```
study2$effort_interleaved <- ((study2$TiredInterleaved + study2$MentallyExhaustingInterl
eaved +
  study2$DifficultInterleaved + study2$BoringInterleaved) / 4)
summary(study2$effort_interleaved) # mean of 3.54, more mentally effortful
```

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    1.000   2.500   3.500   3.542   4.500   6.000
```

**## Perceived Learning**

```
study2$learn_interleaved <- ((study2$RememberAnswersInterleaved + study2$MemoryAnswersIn
terleaved +
  study2$HelpingToLearnInterleaved + study2$LearnAnswersInterleaved) / 4)
summary(study2$learn_interleaved) # mean of 2.87, perceived less learning
```

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    1.000   2.000   2.750   2.873   3.750   6.000
```

```
## Familiar/Habits
```

```
study2$habits_interleaved <- ((study2$ClassStructureInterleaved + study2$FamiliarMethodI  
nterleaved +  
    study2$NewExerciseInterleaved + study2$MatchHabitsInterleaved) / 4)  
summary(study2$habits_interleaved) # mean of 2.74, less familiar/habitual
```

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.    NA's  
##      1.000   2.250   2.750   2.744   3.000   5.750        2
```