Midterm Report
Parson's Programming Puzzles: Optimizing Efficiency and Investigating the Effects of Feedback

Further research on Social Addictive Gameful Engineering (SAGE) design and computational thinking (CT)

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Progress Summary

1. Setup/Initialization

2. Preprocessing

3. Analysis
    a. Normality testing
    b. Performance
    c. Cognitive load

4. Interpretation

Preliminary Results

Cognitive Load

ANOVA

Overall Cognitive Load

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	41.233	8	5.154	1.797	.075
Within Groups	1628.723	568	2.867		
Total	1669.956	576			

Performance (Training)

ANOVA

V7

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	15218146.726	8	1902268.341	35.618	.000
Within Groups	172561064.970	3231	53407.943		
Total	187779211.696	3239			

*V7 = performance column (labelled automatically in SPSS)

Discussion

1. Data completeness
2. Training data vs. transfer data
3. Binary vs. non-binary performance scoring
4. Puzzle scoring
5. fs1 feedback
6. Methodology updates (e.g. quantitative motivation analysis, etc.)

Ongoing Objectives

1. Finalize cognitive load and performance analysis

2. Efficiency (performance and instructional)

3. Motivation

4. Writing

Additional Resources

https://statistics.laerd.com/spss-tutorials/one-way-anova-using-spss-statistics-2.php

https://statistics.laerd.com/spss-tutorials/testing-for-normality-using-spss-statistics.php

https://statistics.laerd.com/spss-tutorials/kruskal-wallis-h-test-using-spss-statistics.php