

Appendix

September 21, 2023

1 Performance change score

Performance Change Score is the sum of the Mistake time and Task completion time scores.

1.1 Rank-based score of performance based on mistake time quantiles

Mistake time score	Quantile ranges for change in mistake time (s)	Count of participants
1	(-3.81, -0.78)	8
2	(-0.78, 0.07)	7
3	(0.07, 0.48)	7
4	(0.48, 0.85)	7
5	(0.85, 1.34)	7
6	(1.34, 1.89)	7
7	(1.89, 2.63)	7
8	(2.63, 3.02)	7
9	(3.02, 4.21)	7
10	(4.21, 7.44)	8

1.2 Rank-based score of performance based on task completion time quantiles

Task completion time score	Quantile ranges for change in task completion time (s)	Count of participants
1	(-18.64, -7.15)	8
2	(-7.15, -1.78)	7
3	(-1.78, 0.44)	7
4	(0.44, 2.24)	7
5	(2.24, 3.69)	7
6	(3.69, 5.45)	7
7	(5.45, 7.72)	7
8	(7.72, 10.57)	7
9	(10.57, 14.35)	7
10	(14.35, 87.45)	8

2 Loss of physiological arousal sensor data across conditions

	Vibration (22)	Kinesthetic (26)	No Haptics (25)
SC	2	11	10
SCRamp	1	10	9
SCRPeaks	1	11	10
HR	1	2	0
IBI	1	2	1
RMSSD	1	2	1
SDNN	1	2	1
HFN	1	2	1
LF/HF Ratio	1	2	1

3 Task Completion Time (in seconds)

Condition	Test	Mean (s)	95% CI (s)
Visual/Vibrotactile	Pretest	37.42	(24.96, 49.89)
	Intermediate Test	32.33	(24.62, 40.03)
	Post Test	32.24	(24.22, 40.26)
Visual/Kinesthetic	Pretest	27.25	(23.47, 31.04)
	Intermediate Test	25.17	(20.78, 29.56)
	Post Test	24.04	(19.71, 28.37)
Visual	Pretest	31.01	(20.82, 41.21)
	Intermediate Test	27.01	(19.75, 34.28)
	Post Test	23.17	(18.59, 27.75)

4 Contact Time (in seconds)

Condition	Test	Mean (s)	95% CI (s)
Visual/Vibrotactile	Pretest	7.57	(6.34, 8.81)
	Intermediate Test	6.41	(4.52, 8.30)
	Post Test	5.49	(4.10, 6.87)
Visual/Kinesthetic	Pretest	7.53	(6.43, 8.63)
	Intermediate Test	6.43	(5.58, 7.29)
	Post Test	6.38	(5.31, 7.46)
Visual	Pretest	6.70	(5.87, 7.53)
	Intermediate Test	5.71	(4.73, 6.70)
	Post Test	5.19	(4.47, 5.91)