Appendix S1. The number of participants identified as outliers in the current analyses.

**Training Data (Day 1)**

* Articulation rate
  + Blocked = 1 (Subject#100)
* Mid-clause pause duration
  + Blocked = 1 (Subject#123)
  + Interleaved = 2 (Subject#6, Subject#98)
* Clause-final pause duration
  + Interleaved = 2 (Subject#107, Subject#98)
* Repetition
  + Interleaved = 1 (Subject#85)

**Training Data (Day 2)**

No outlier was identified.

**Training Data (Day 3)**

* Articulation rate
  + Interleaved = 1 (Subject#97)
* Clause-final pause duration
  + Blocked = 2 (Subject#101, Subject#108)
  + Interleaved = 1 (Subject#107)
* Repetition
  + Blocked = 1 (Subject#116)
  + Interleaved = 1 (Subject#26)
* Repairs
  + Interleaved = 2 (Subject#26, Subject#103)

**Pretest and posttest data**

* Mid-clause pause duration
  + Blocked = 2 (Subject#105, Subject#112)
* Clause-final pause duration
  + Interleaved = 2 (Subject#98, Subject#107)
  + Blocked = 1 (Subject#105)
* Clause-final pause frequency
  + Blocked = 1 (Subject#126)
* Repairs
  + Interleaved = 1 (Subject#26)

Appendix S2. Descriptive statistics for fluency data.

**[Total Speech Time (in seconds)]**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Blocked Group | |  | Interleaved Group | |
|  | *M* | *SD* |  | *M* | *SD* |
| Pretest | 88.14 | 26.11 |  | 95.77 | 26.34 |
| Posttest | 95.05 | 24.50 |  | 101.47 | 22.56 |
| Training Day 1\_1 | 101.06 | 39.77 |  | 118.15 | 40.03 |
| Training Day 1\_2 | 114.79 | 39.20 |  | 121.60 | 33.37 |
| Training Day 1\_3 | 114.60 | 38.33 |  | 122.36 | 32.34 |
| Training Day 2\_1 | 98.28 | 37.42 |  | 103.73 | 34.56 |
| Training Day 2\_2 | 102.12 | 39.91 |  | 113.54 | 33.76 |
| Training Day 2\_3 | 109.58 | 37.57 |  | 119.65 | 36.74 |
| Training Day 3\_1 | 103.30 | 45.10 |  | 103.22 | 40.58 |
| Training Day 3\_2 | 107.42 | 35.19 |  | 111.40 | 34.96 |
| Training Day 3\_3 | 105.68 | 39.44 |  | 112.72 | 38.51 |

**[Training Data for Analyses]**

Articulation rate

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Blocked Group | | | |  | Interleaved Group | | | |
|  |  |  | 95% CI | |  |  |  | 95% CI | |
| Trial | *M* | *SD* | Lower | Upper |  | *M* | *SD* | Lower | Upper |
| Day 1\_1 | 152.73 | 28.51 | 140.50 | 163.92 |  | 154.88 | 24.72 | 145.60 | 164.44 |
| Day 1\_2 | 160.54 | 26.88 | 149.03 | 171.55 |  | 155.12 | 27.27 | 144.35 | 166.45 |
| Day 1\_3 | 170.14 | 25.92 | 158.72 | 180.63 |  | 155.22 | 23.16 | 146.19 | 164.69 |
| Day 2\_1 | 160.20 | 24.09 | 149.21 | 169.90 |  | 167.26 | 24.48 | 158.25 | 177.04 |
| Day 2\_2 | 163.06 | 27.64 | 149.08 | 174.62 |  | 166.64 | 26.78 | 156.71 | 178.24 |
| Day 2\_3 | 168.05 | 23.80 | 156.99 | 177.78 |  | 161.21 | 24.38 | 151.88 | 170.63 |
| Day 3\_1 | 160.92 | 22.11 | 151.39 | 170.03 |  | 168.73 | 26.73 | 159.29 | 178.65 |
| Day 3\_2 | 165.98 | 24.08 | 156.14 | 176.07 |  | 168.48 | 26.98 | 158.64 | 179.56 |
| Day 3\_3 | 167.60 | 22.87 | 157.78 | 176.85 |  | 163.91 | 24.24 | 155.14 | 173.13 |

Mid-clause pause duration

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Blocked Group | | | |  | Interleaved Group | | | |
|  |  |  | 95% CI | |  |  |  | 95% CI | |
| Trial | *M* | *SD* | Lower | Upper |  | *M* | *SD* | Lower | Upper |
| Day 1\_1 | 0.52 | 0.12 | 0.47 | 0.57 |  | 0.63 | 0.23 | 0.55 | 0.72 |
| Day 1\_2 | 0.50 | 0.16 | 0.43 | 0.58 |  | 0.61 | 0.26 | 0.52 | 0.72 |
| Day 1\_3 | 0.48 | 0.16 | 0.41 | 0.54 |  | 0.59 | 0.18 | 0.52 | 0.67 |
| Day 2\_1 | 0.61 | 0.20 | 0.53 | 0.69 |  | 0.51 | 0.15 | 0.46 | 0.56 |
| Day 2\_2 | 0.50 | 0.13 | 0.45 | 0.55 |  | 0.48 | 0.12 | 0.44 | 0.53 |
| Day 2\_3 | 0.48 | 0.14 | 0.43 | 0.54 |  | 0.57 | 0.18 | 0.50 | 0.64 |
| Day 3\_1 | 0.57 | 0.22 | 0.47 | 0.66 |  | 0.45 | 0.14 | 0.40 | 0.51 |
| Day 3\_2 | 0.47 | 0.20 | 0.39 | 0.56 |  | 0.46 | 0.11 | 0.42 | 0.51 |
| Day 3\_3 | 0.42 | 0.17 | 0.36 | 0.50 |  | 0.47 | 0.15 | 0.41 | 0.53 |

Clause-final pause duration

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Blocked Group | | | |  | Interleaved Group | | | |
|  |  |  | 95% CI | |  |  |  | 95% CI | |
| Trial | *M* | *SD* | Lower | Upper |  | *M* | *SD* | Lower | Upper |
| Day 1\_1 | 1.06 | 0.55 | 0.86 | 1.27 |  | 0.97 | 0.36 | 0.83 | 1.11 |
| Day 1\_2 | 1.00 | 0.46 | 0.85 | 1.19 |  | 1.05 | 0.38 | 0.92 | 1.19 |
| Day 1\_3 | 0.94 | 0.41 | 0.79 | 1.11 |  | 1.16 | 0.58 | 0.95 | 1.40 |
| Day 2\_1 | 1.02 | 0.40 | 0.88 | 1.19 |  | 0.95 | 0.34 | 0.83 | 1.10 |
| Day 2\_2 | 0.93 | 0.50 | 0.74 | 1.13 |  | 0.96 | 0.36 | 0.82 | 1.11 |
| Day 2\_3 | 0.99 | 0.51 | 0.78 | 1.22 |  | 1.07 | 0.46 | 0.91 | 1.26 |
| Day 3\_1 | 1.09 | 0.60 | 0.87 | 1.32 |  | 0.87 | 0.31 | 0.77 | 0.99 |
| Day 3\_2 | 0.91 | 0.40 | 0.75 | 1.06 |  | 0.93 | 0.32 | 0.81 | 1.06 |
| Day 3\_3 | 0.86 | 0.37 | 0.70 | 1.02 |  | 1.00 | 0.40 | 0.84 | 1.18 |

Mid-clause pause frequency

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Blocked Group | | | |  | Interleaved Group | | | |
|  |  |  | 95% CI | |  |  |  | 95% CI | |
| Trial | *M* | *SD* | Lower | Upper |  | *M* | *SD* | Lower | Upper |
| Day 1\_1 | 18.89 | 6.02 | 16.27 | 21.50 |  | 19.58 | 6.07 | 17.19 | 21.72 |
| Day 1\_2 | 20.03 | 5.22 | 17.99 | 22.19 |  | 20.30 | 6.04 | 17.92 | 22.63 |
| Day 1\_3 | 18.97 | 5.11 | 17.00 | 21.22 |  | 19.06 | 5.97 | 16.87 | 21.51 |
| Day 2\_1 | 18.42 | 5.55 | 16.17 | 20.53 |  | 19.71 | 5.04 | 17.90 | 21.67 |
| Day 2\_2 | 19.04 | 4.83 | 17.17 | 21.12 |  | 19.93 | 6.43 | 17.78 | 22.28 |
| Day 2\_3 | 17.75 | 4.71 | 15.72 | 19.80 |  | 18.87 | 4.98 | 17.07 | 20.71 |
| Day 3\_1 | 17.37 | 4.74 | 15.51 | 19.46 |  | 17.65 | 4.82 | 15.94 | 19.54 |
| Day 3\_2 | 17.36 | 5.17 | 15.27 | 19.78 |  | 17.26 | 5.31 | 15.52 | 19.29 |
| Day 3\_3 | 17.20 | 5.40 | 14.71 | 19.88 |  | 17.60 | 5.07 | 15.84 | 19.63 |

Clause-final pause frequency

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Blocked Group | | | |  | Interleaved Group | | | |
|  |  |  | 95% CI | |  |  |  | 95% CI | |
| Trial | *M* | *SD* | Lower | Upper |  | *M* | *SD* | Lower | Upper |
| Day 1\_1 | 8.00 | 2.91 | 7.03 | 9.13 |  | 6.57 | 2.16 | 5.79 | 7.30 |
| Day 1\_2 | 7.69 | 2.65 | 6.63 | 8.84 |  | 5.98 | 1.94 | 5.28 | 6.72 |
| Day 1\_3 | 8.17 | 2.82 | 7.07 | 9.33 |  | 6.42 | 1.89 | 5.77 | 7.10 |
| Day 2\_1 | 7.41 | 1.94 | 6.63 | 8.25 |  | 7.90 | 2.86 | 7.02 | 8.79 |
| Day 2\_2 | 8.24 | 3.33 | 6.98 | 9.54 |  | 7.66 | 2.04 | 6.96 | 8.50 |
| Day 2\_3 | 8.67 | 3.42 | 7.37 | 10.10 |  | 6.98 | 2.19 | 6.20 | 7.82 |
| Day 3\_1 | 8.61 | 3.55 | 7.35 | 10.05 |  | 9.30 | 2.01 | 8.62 | 10.01 |
| Day 3\_2 | 9.37 | 3.33 | 7.94 | 10.68 |  | 9.13 | 1.95 | 8.45 | 9.80 |
| Day 3\_3 | 10.35 | 3.62 | 8.98 | 11.76 |  | 8.50 | 1.95 | 7.78 | 9.23 |

Repetitions

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Blocked Group | | | |  | Interleaved Group | | | |
|  |  |  | 95% CI | |  |  |  | 95% CI | |
| Trial | *M* | *SD* | Lower | Upper |  | *M* | *SD* | Lower | Upper |
| Day 1\_1 | 2.33 | 2.42 | 1.32 | 3.31 |  | 4.04 | 4.26 | 2.43 | 5.81 |
| Day 1\_2 | 2.71 | 2.76 | 1.65 | 3.83 |  | 3.84 | 3.16 | 2.61 | 5.10 |
| Day 1\_3 | 2.76 | 3.13 | 1.56 | 3.97 |  | 3.72 | 3.59 | 2.43 | 5.13 |
| Day 2\_1 | 2.00 | 1.95 | 1.29 | 2.75 |  | 3.32 | 3.58 | 1.96 | 4.91 |
| Day 2\_2 | 1.38 | 1.69 | 0.81 | 2.00 |  | 4.44 | 5.43 | 2.65 | 6.64 |
| Day 2\_3 | 1.86 | 1.65 | 1.18 | 2.55 |  | 3.80 | 4.84 | 2.24 | 5.69 |
| Day 3\_1 | 2.00 | 2.59 | 1.07 | 3.00 |  | 2.44 | 3.80 | 1.23 | 4.03 |
| Day 3\_2 | 1.62 | 1.72 | 1.00 | 2.26 |  | 3.08 | 4.25 | 1.52 | 4.76 |
| Day 3\_3 | 2.29 | 3.49 | 1.05 | 3.65 |  | 3.68 | 5.19 | 1.91 | 5.83 |

Repairs

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Blocked Group | | | |  | Interleaved Group | | | |
|  |  |  | 95% CI | |  |  |  | 95% CI | |
| Trial | *M* | *SD* | Lower | Upper |  | *M* | *SD* | Lower | Upper |
| Day 1\_1 | 5.27 | 4.74 | 3.36 | 7.55 |  | 6.24 | 4.01 | 4.62 | 7.67 |
| Day 1\_2 | 5.86 | 4.95 | 3.87 | 7.91 |  | 6.16 | 4.80 | 4.46 | 7.95 |
| Day 1\_3 | 5.05 | 4.33 | 3.35 | 7.14 |  | 7.08 | 5.69 | 4.98 | 9.23 |
| Day 2\_1 | 4.18 | 2.94 | 3.04 | 5.47 |  | 5.12 | 4.43 | 3.58 | 6.88 |
| Day 2\_2 | 5.00 | 3.93 | 3.58 | 6.88 |  | 5.56 | 5.98 | 3.53 | 7.96 |
| Day 2\_3 | 4.09 | 2.93 | 2.92 | 5.45 |  | 5.76 | 6.02 | 3.66 | 8.12 |
| Day 3\_1 | 4.68 | 3.94 | 3.04 | 6.45 |  | 5.52 | 5.45 | 3.48 | 7.73 |
| Day 3\_2 | 4.50 | 3.46 | 3.34 | 5.95 |  | 5.88 | 4.99 | 4.04 | 7.79 |
| Day 3\_3 | 4.23 | 3.79 | 2.76 | 5.94 |  | 4.40 | 3.85 | 3.04 | 5.75 |

**[Pretest-Posttest Data for Analyses]**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Blocked Group | | | |  | Interleaved Group | | | |
|  |  |  | 95% CI | |  |  |  | 95% CI | |
|  | M | SD | Lower | Upper |  | M | SD | Lower | Upper |
| Pretest |  |  |  |  |  |  |  |  |  |
| Articulation rate | 163.19 | 22.66 | 153.62 | 172.76 |  | 162.97 | 24.38 | 153.12 | 172.81 |
| Mid-clause pause duration | 0.72 | 0.48 | 0.52 | 0.93 |  | 0.60 | 0.26 | 0.49 | 0.70 |
| Clause-final pause duration | 0.85 | 0.37 | 0.69 | 1.01 |  | 0.88 | 0.37 | 0.72 | 1.04 |
| Mid-clause pause frequency | 19.00 | 5.65 | 16.62 | 21.39 |  | 21.37 | 5.75 | 19.05 | 23.69 |
| Clause-final pause frequency | 7.88 | 2.58 | 6.76 | 8.99 |  | 7.14 | 2.37 | 6.18 | 8.09 |
| Repetitions | 1.55 | 1.24 | 1.02 | 2.07 |  | 2.62 | 2.48 | 1.62 | 3.63 |
| Repairs | 1.79 | 1.42 | 1.19 | 2.39 |  | 1.59 | 1.07 | 1.15 | 2.03 |
| Posttest |  |  |  |  |  |  |  |  |  |
| Articulation rate | 180.64 | 26.99 | 169.24 | 192.03 |  | 168.80 | 20.68 | 160.45 | 177.15 |
| Mid-clause pause duration | 0.46 | 0.15 | 0.40 | 0.52 |  | 0.48 | 0.16 | 0.42 | 0.55 |
| Clause-final pause duration | 0.72 | 0.22 | 0.63 | 0.82 |  | 0.84 | 0.34 | 0.69 | 0.98 |
| Mid-clause pause frequency | 21.32 | 5.11 | 19.16 | 23.47 |  | 21.02 | 4.87 | 19.06 | 22.99 |
| Clause-final pause frequency | 9.45 | 2.20 | 8.50 | 10.41 |  | 8.09 | 2.23 | 7.19 | 9.00 |
| Repetitions | 1.39 | 1.57 | 0.73 | 2.05 |  | 2.20 | 2.34 | 1.25 | 3.15 |
| Repairs | 1.90 | 1.55 | 1.25 | 2.56 |  | 1.94 | 1.57 | 1.29 | 2.58 |

Appendix S3.

Intercorrelations for aptitude scores and fluency changes.

|  |  |  |  |
| --- | --- | --- | --- |
|  | NWRT | TMT | LLAMA\_B |
| *Day 1* |  |  |  |
| Articulation rate | .28 | .09 | .02 |
| Mid-clause pause dur. | -.33\* | -.10 | .06 |
| Clause-final pause dur. | .25 | -.11 | .07 |
| Mid-clause pause freq. | .03 | .19 | .16 |
| Clause-final pause Freq. | .08 | -.19 | -.34\* |
| Repetitions | .06 | -.10 | .11 |
| Repairs | -.06 | .25 | .03 |
| *Day 2* |  |  |  |
| Articulation rate | .19 | .25 | .07 |
| Mid-clause pause dur. | -.18 | -.12 | -.03 |
| Clause-final pause dur. | -.10 | -.05 | .02 |
| Mid-clause pause freq. | -.24 | .22 | .21 |
| Clause-final pause Freq. | .35\* | -.17 | -.27 |
| Repetitions | -.16 | -.11 | .08 |
| Repairs | -.04 | .26 | .03 |
| *Day 3* |  |  |  |
| Articulation rate | .10 | .18 | .18 |
| Mid-clause pause dur. | -.03 | -.13 | -.26 |
| Clause-final pause dur. | -.02 | -.20 | -.12 |
| Mid-clause pause freq. | -.37\* | .22 | -.17 |
| Clause-final pause Freq. | .18 | .10 | .26 |
| Repetitions | .10 | -.10 | .06 |
| Repairs | -.13 | -.01 | .11 |
| *Pretest-Posttest* |  |  |  |
| Articulation rate | .08 | .19 | .24 |
| Mid-clause pause duration | -.14 | .14 | .20 |
| Clause-final pause duration | -.05 | .04 | -.10 |
| Mid-clause pause frequency | -.09 | .10 | -.12 |
| Clause-final pause frequency | .23 | -.04 | .29\* |
| Repetitions | .11 | -.04 | .17 |
| Repairs | .23 | .14 | -.16 |

*Note*. \* *p* < .05.

Appendix S4.

Hierarchical multiple regression results.

**Day 1**

[Articulation Rate]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .13 | .13 | .014 | .01 |
| Constant | 14.13 | [6.18,22.08] |  |  |  |  |  |  |  |
| Group | -14.08 | [-25.11,-3.05] | .01 | -.37 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .20 | .06 | .060 | .37 |
| Constant | 13.11 | [5.03,21.19] |  |  |  |  |  |  |  |
| Group | -12.10 | [-23.48,-0.73] | .04 | -.31 |  |  |  |  |  |
| NWR | 0.86 | [-0.15,1.86] | .09 | .26 |  |  |  |  |  |
| TMT | 0.14 | [-0.2,0.47] | .41 | .13 |  |  |  |  |  |
| LLAMA\_B | -0.02 | [-1.5,1.46] | .98 | .00 |  |  |  |  |  |

[Mid-Clause Pause Duration]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .00 | .00 | .77 | .77 |
| Constant | -0.03 | [-0.09,0.04] |  |  |  |  |  |  |  |
| Group | 0.01 | [-0.08,0.1] | .77 | .05 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .17 | .17 | .12 | .07 |
| Constant | -0.01 | [-0.07,0.05] |  |  |  |  |  |  |  |
| Group | -0.01 | [-0.1,0.07] | .73 | -.05 |  |  |  |  |  |
| NWR | -0.01 | [-0.02,0] | .01 | -.41 |  |  |  |  |  |
| TMT | 0.00 | [0,0] | .13 | -.25 |  |  |  |  |  |
| LLAMA\_B | 0.01 | [-0.01,0.02] | .30 | .16 |  |  |  |  |  |
| Step 3 |  |  |  |  |  | .23 | .06 | .07 | .098 |
| Constant | -0.01 | [-0.07,0.05] | .78 | .00 |  |  |  |  |  |
| Group | -0.01 | [-0.1,0.07] | .78 | -.04 |  |  |  |  |  |
| NWR | -0.01 | [-0.02,-0.01] | .00 | -.61 |  |  |  |  |  |
| TMT | 0.00 | [0,0] | .09 | -.27 |  |  |  |  |  |
| LLAMA\_B | 0.00 | [-0.01,0.02] | .43 | .12 |  |  |  |  |  |
| Group x NWR | 0.01 | [0,0.03] | .098 | .32 |  |  |  |  |  |

[Clause-Final Pause Duration]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .10 | .10 | .04 | .03 |
| Constant | -0.12 | [-0.31,0.08] |  |  |  |  |  |  |  |
| Group | 0.29 | [0.02,0.56] | .03 | .31 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .19 | .09 | .07 | .22 |
| Constant | -0.14 | [-0.33,0.05] |  |  |  |  |  |  |  |
| Group | 0.33 | [0.06,0.6] | .02 | .36 |  |  |  |  |  |
| NWR | 0.02 | [0,0.05] | .052 | .30 |  |  |  |  |  |
| TMT | 0.00 | [-0.01,0.01] | .90 | -.02 |  |  |  |  |  |
| LLAMA\_B | 0.00 | [-0.03,0.04] | .90 | .02 |  |  |  |  |  |

[Mid-Clause Pause Frequency]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .00 | .00 | .69 | .69 |
| Constant | 0.01 | [-1.92,1.93] |  |  |  |  |  |  |  |
| Group | -0.53 | [-3.2,2.14] | .69 | -.06 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .05 | .05 | .67 | .53 |
| Constant | -0.04 | [-2.02,1.94] |  |  |  |  |  |  |  |
| Group | -0.44 | [-3.23,2.35] | .75 | -.05 |  |  |  |  |  |
| NWR | 0.04 | [-0.2,0.29] | .73 | .06 |  |  |  |  |  |
| TMT | 0.04 | [-0.04,0.12] | .31 | .17 |  |  |  |  |  |
| LLAMA\_B | 0.13 | [-0.23,0.49] | .47 | .12 |  |  |  |  |  |

[Clause-Final Pause Frequency]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .01 | .01 | .53 | .53 |
| Constant | 0.26 | [-0.68,1.21] |  |  |  |  |  |  |  |
| Group | -0.42 | [-1.73,0.9] | .53 | -.10 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .14 | .13 | .18 | .12 |
| Constant | 0.19 | [-0.74,1.12] |  |  |  |  |  |  |  |
| Group | -0.27 | [-1.58,1.04] | .68 | -.06 |  |  |  |  |  |
| NWR | 0.03 | [-0.09,0.14] | .66 | .07 |  |  |  |  |  |
| TMT | -0.01 | [-0.05,0.03] | .52 | -.10 |  |  |  |  |  |
| LLAMA\_B | -0.18 | [-0.35,-0.01] | .04 | -.32 |  |  |  |  |  |

[Repetitions]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .01 | .01 | .54 | .54 |
| Constant | 0.22 | [-1.04,1.47] |  |  |  |  |  |  |  |
| Group | -0.54 | [-2.28,1.2] | .54 | -.09 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .04 | .04 | .76 | .69 |
| Constant | 0.30 | [-1,1.6] |  |  |  |  |  |  |  |
| Group | -0.70 | [-2.53,1.14] | .45 | -.12 |  |  |  |  |  |
| NWR | 0.00 | [-0.16,0.16] | .97 | -.01 |  |  |  |  |  |
| TMT | -0.02 | [-0.08,0.03] | .38 | -.15 |  |  |  |  |  |
| LLAMA\_B | 0.12 | [-0.12,0.36] | .32 | .16 |  |  |  |  |  |

[Repairs]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .03 | .03 | .28 | .28 |
| Constant | -0.16 | [-1.96,1.64] |  |  |  |  |  |  |  |
| Group | 1.37 | [-1.13,3.86] | .28 | .16 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .10 | .07 | .35 | .35 |
| Constant | -0.32 | [-2.14,1.5] |  |  |  |  |  |  |  |
| Group | 1.67 | [-0.89,4.24] | .20 | .20 |  |  |  |  |  |
| NWR | 0.04 | [-0.19,0.26] | .75 | .05 |  |  |  |  |  |
| TMT | 0.07 | [-0.01,0.14] | .07 | .29 |  |  |  |  |  |
| LLAMA\_B | -0.07 | [-0.41,0.26] | .66 | -.07 |  |  |  |  |  |

**Day 2**

[Articulation Rate]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .19 | .19 | .00 | .00 |
| Constant | 8.03 | [1.59,14.47] |  |  |  |  |  |  |  |
| Group | -14.22 | [-23.16,-5.28] | .00 | -.44 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .27 | .08 | .01 | .21 |
| Constant | 7.21 | [0.78,13.65] |  |  |  |  |  |  |  |
| Group | -12.65 | [-21.71,-3.59] | .01 | -.39 |  |  |  |  |  |
| NWR | 0.54 | [-0.26,1.34] | .18 | .19 |  |  |  |  |  |
| TMT | 0.24 | [-0.03,0.51] | .08 | .26 |  |  |  |  |  |
| LLAMA\_B | 0.12 | [-1.06,1.29] | .84 | .03 |  |  |  |  |  |

[Mid-Clause Pause Duration]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .25 | .25 | .00 | .00 |
| Constant | -0.11 | [-0.18,-0.05] |  |  |  |  |  |  |  |
| Group | 0.17 | [0.08,0.25] | .00 | .50 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .28 | .03 | .01 | .69 |
| Constant | -0.11 | [-0.17,-0.04] |  |  |  |  |  |  |  |
| Group | 0.16 | [0.07,0.25] | .00 | .48 |  |  |  |  |  |
| NWR | 0.00 | [-0.01,0] | .36 | -.13 |  |  |  |  |  |
| TMT | 0.00 | [0,0] | .47 | -.11 |  |  |  |  |  |
| LLAMA\_B | 0.00 | [-0.01,0.01] | .76 | -.04 |  |  |  |  |  |
| Step 3 |  |  |  |  |  | .33 | .05 | .01 | .09 |
| Constant | -0.11 | [-0.18,-0.05] | .00 | .00 |  |  |  |  |  |
| Group | 0.15 | [0.06,0.24] | .00 | .47 |  |  |  |  |  |
| NWR | 0.00 | [-0.01,0.01] | .76 | .05 |  |  |  |  |  |
| TMT | 0.00 | [0,0] | .56 | -.08 |  |  |  |  |  |
| LLAMA\_B | 0.00 | [-0.01,0.01] | .97 | -.01 |  |  |  |  |  |
| Group x NWR | -0.01 | [-0.03,0] | .09 | -.30 |  |  |  |  |  |

[Clause-Final Pause Duration]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .03 | .03 | .24 | .24 |
| Constant | -0.05 | [-0.2,0.09] |  |  |  |  |  |  |  |
| Group | 0.12 | [-0.08,0.32] | .24 | .18 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .04 | .01 | .79 | .95 |
| Constant | -0.05 | [-0.2,0.11] |  |  |  |  |  |  |  |
| Group | 0.10 | [-0.11,0.32] | .33 | .15 |  |  |  |  |  |
| NWR | -0.01 | [-0.02,0.01] | .59 | -.09 |  |  |  |  |  |
| TMT | 0.00 | [-0.01,0] | .68 | -.07 |  |  |  |  |  |
| LLAMA\_B | 0.00 | [-0.03,0.03] | .86 | .03 |  |  |  |  |  |

[Mid-Clause Pause Frequency]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .00 | .00 | .87 | .87 |
| Constant | -0.66 | [-2.27,0.95] |  |  |  |  |  |  |  |
| Group | -0.18 | [-2.42,2.05] | .87 | -.02 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .13 | .13 | .21 | .13 |
| Constant | -0.47 | [-2.05,1.12] |  |  |  |  |  |  |  |
| Group | -0.56 | [-2.79,1.68] | .62 | -.08 |  |  |  |  |  |
| NWR | -0.15 | [-0.35,0.04] | .12 | -.24 |  |  |  |  |  |
| TMT | 0.02 | [-0.04,0.09] | .50 | .11 |  |  |  |  |  |
| LLAMA\_B | 0.20 | [-0.09,0.49] | .18 | .21 |  |  |  |  |  |
| Step 3 |  |  |  |  |  | .31 | .18 | .02 | .01 |
| Constant | -0.29 | [-1.75,1.17] | .69 | .00 |  |  |  |  |  |
| Group | -0.29 | [-2.34,1.77] | .78 | -.04 |  |  |  |  |  |
| NWR | -0.25 | [-0.48,-0.03] | .03 | -.40 |  |  |  |  |  |
| TMT | 0.03 | [-0.03,0.09] | .32 | .15 |  |  |  |  |  |
| LLAMA\_B | 0.44 | [0.09,0.78] | .01 | .47 |  |  |  |  |  |
| Group x NWR | 0.40 | [0.03,0.77] | .04 | .38 |  |  |  |  |  |
| Group x LLAMA\_B | -0.69 | [-1.23,-0.16] | .01 | -.49 |  |  |  |  |  |

[Clause-Final Pause Frequency]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .16 | .16 | .01 | .01 |
| Constant | 1.22 | [0.13,2.3] |  |  |  |  |  |  |  |
| Group | -2.16 | [-3.67,-0.66] | .01 | -.40 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .31 | .15 | .003 | .04 |
| Constant | 1.03 | [0,2.07] |  |  |  |  |  |  |  |
| Group | -1.81 | [-3.26,-0.35] | .02 | -.33 |  |  |  |  |  |
| NWR | 0.14 | [0.01,0.27] | .04 | .30 |  |  |  |  |  |
| TMT | -0.01 | [-0.05,0.03] | .67 | -.06 |  |  |  |  |  |
| LLAMA\_B | -0.17 | [-0.36,0.02] | .08 | -.25 |  |  |  |  |  |

[Repetitions]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .02 | .02 | .34 | .33 |
| Constant | -0.25 | [-1.38,0.88] |  |  |  |  |  |  |  |
| Group | 0.76 | [-0.81,2.33] | .33 | .15 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .08 | .06 | .50 | .48 |
| Constant | -0.09 | [-1.25,1.07] |  |  |  |  |  |  |  |
| Group | 0.45 | [-1.19,2.08] | .58 | .09 |  |  |  |  |  |
| NWR | -0.09 | [-0.24,0.05] | .20 | -.21 |  |  |  |  |  |
| TMT | -0.03 | [-0.07,0.02] | .26 | -.18 |  |  |  |  |  |
| LLAMA\_B | 0.09 | [-0.12,0.3] | .40 | .14 |  |  |  |  |  |

[Repairs]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .02 | .02 | .32 | .32 |
| Constant | -0.12 | [-1.68,1.44] |  |  |  |  |  |  |  |
| Group | 1.09 | [-1.08,3.26] | .32 | .15 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .11 | .08 | .32 | .30 |
| Constant | -0.27 | [-1.85,1.3] |  |  |  |  |  |  |  |
| Group | 1.39 | [-0.83,3.61] | .21 | .19 |  |  |  |  |  |
| NWR | 0.04 | [-0.15,0.24] | .67 | .07 |  |  |  |  |  |
| TMT | 0.06 | [0,0.13] | .06 | .31 |  |  |  |  |  |
| LLAMA\_B | -0.07 | [-0.35,0.22] | .65 | -.07 |  |  |  |  |  |

**Day 3**

[Articulation Rate]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .14 | .14 | .01 | .01 |
| Constant | 4.99 | [-2.21,12.19] |  |  |  |  |  |  |  |
| Group | -12.96 | [-22.95,-2.97] | .01 | -.37 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .20 | .06 | .06 | .38 |
| Constant | 4.96 | [-2.37,12.28] |  |  |  |  |  |  |  |
| Group | -12.89 | [-23.2,-2.57] | .02 | -.37 |  |  |  |  |  |
| NWR | 0.19 | [-0.72,1.1] | .68 | .06 |  |  |  |  |  |
| TMT | 0.12 | [-0.18,0.43] | .41 | .13 |  |  |  |  |  |
| LLAMA\_B | 0.81 | [-0.53,2.16] | .23 | .18 |  |  |  |  |  |

[Mid-Clause Pause Duration]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .27 | .27 | .00 | .00 |
| Constant | -0.12 | [-0.18,-0.07] |  |  |  |  |  |  |  |
| Group | 0.15 | [0.07,0.22] | .00 | .52 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .38 | .11 | .00 | .09 |
| Constant | -0.13 | [-0.18,-0.08] |  |  |  |  |  |  |  |
| Group | 0.16 | [0.09,0.23] | .00 | .57 |  |  |  |  |  |
| NWR | 0.00 | [0,0.01] | .51 | .09 |  |  |  |  |  |
| TMT | 0.00 | [0,0] | .91 | .01 |  |  |  |  |  |
| LLAMA\_B | -0.01 | [-0.02,0] | .02 | -.33 |  |  |  |  |  |

[Clause-Final Pause Duration]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .24 | .24 | .00 | .00 |
| Constant | -0.16 | [-0.29,-0.03] |  |  |  |  |  |  |  |
| Group | 0.32 | [0.14,0.5] | .00 | .49 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .28 | .04 | .01 | .50 |
| Constant | -0.16 | [-0.3,-0.03] |  |  |  |  |  |  |  |
| Group | 0.33 | [0.14,0.51] | .00 | .50 |  |  |  |  |  |
| NWR | 0.00 | [-0.01,0.02] | .75 | .05 |  |  |  |  |  |
| TMT | 0.00 | [-0.01,0] | .44 | -.11 |  |  |  |  |  |
| LLAMA\_B | -0.01 | [-0.04,0.01] | .33 | -.14 |  |  |  |  |  |

[Mid-Clause Pause Frequency]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .00 | .00 | .91 | .91 |
| Constant | 0.07 | [-1.42,1.56] |  |  |  |  |  |  |  |
| Group | -0.12 | [-2.18,1.95] | .91 | -.02 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .19 | .19 | .07 | .04 |
| Constant | 0.13 | [-1.28,1.55] |  |  |  |  |  |  |  |
| Group | -0.24 | [-2.23,1.75] | .81 | -.04 |  |  |  |  |  |
| NWR | -0.18 | [-0.36,-0.01] | .04 | -.32 |  |  |  |  |  |
| TMT | 0.03 | [-0.02,0.09] | .24 | .18 |  |  |  |  |  |
| LLAMA\_B | -0.16 | [-0.42,0.1] | .22 | -.19 |  |  |  |  |  |
| Step 3 |  |  |  |  |  | .30 | .11 | .01 | .01 |
| Constant | 0.27 | [-1.06,1.61] | .68 | .00 |  |  |  |  |  |
| Group | -0.13 | [-2,1.74] | .89 | -.02 |  |  |  |  |  |
| NWR | -0.34 | [-0.55,-0.13] | .00 | -.59 |  |  |  |  |  |
| TMT | 0.03 | [-0.03,0.08] | .30 | .15 |  |  |  |  |  |
| LLAMA\_B | -0.21 | [-0.46,0.04] | .09 | -.24 |  |  |  |  |  |
| Group x NWR | 0.42 | [0.09,0.75] | .01 | .44 |  |  |  |  |  |

[Clause-Final Pause Frequency]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .22 | .22 | .00 | .00 |
| Constant | 1.48 | [0.52,2.43] |  |  |  |  |  |  |  |
| Group | -2.30 | [-3.63,-0.98] | .00 | -.47 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .32 | .10 | .00 | .13 |
| Constant | 1.52 | [0.57,2.46] |  |  |  |  |  |  |  |
| Group | -2.38 | [-3.7,-1.05] | .00 | -.48 |  |  |  |  |  |
| NWR | 0.04 | [-0.08,0.15] | .55 | .08 |  |  |  |  |  |
| TMT | 0.00 | [-0.04,0.04] | .96 | .01 |  |  |  |  |  |
| LLAMA\_B | 0.19 | [0.01,0.36] | .04 | .30 |  |  |  |  |  |

[Repetitions]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .00 | .00 | .98 | .98 |
| Constant | 0.30 | [-1.08,1.69] |  |  |  |  |  |  |  |
| Group | -0.02 | [-1.95,1.9] | .98 | .00 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .02 | .02 | .93 | .83 |
| Constant | 0.32 | [-1.13,1.77] |  |  |  |  |  |  |  |
| Group | -0.05 | [-2.09,1.99] | .96 | -.01 |  |  |  |  |  |
| NWR | 0.04 | [-0.14,0.22] | .68 | .07 |  |  |  |  |  |
| TMT | -0.02 | [-0.08,0.04] | .56 | -.10 |  |  |  |  |  |
| LLAMA\_B | 0.06 | [-0.2,0.33] | .63 | .08 |  |  |  |  |  |
| Step 3 |  |  |  |  |  | .12 | .10 | .41 | .046 |
| Constant | 0.22 | [-1.18,1.61] | .76 | .00 |  |  |  |  |  |
| Group | 0.00 | [-1.96,1.97] | 1.00 | .00 |  |  |  |  |  |
| NWR | 0.07 | [-0.11,0.25] | .43 | .13 |  |  |  |  |  |
| TMT | 0.04 | [-0.04,0.12] | .33 | .23 |  |  |  |  |  |
| LLAMA\_B | 0.08 | [-0.18,0.33] | .54 | .10 |  |  |  |  |  |
| Group x TMT | -0.11 | [-0.22,0] | .046 | -.45 |  |  |  |  |  |

[Repairs]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .00 | .00 | .83 | .83 |
| Constant | -0.35 | [-1.65,0.95] |  |  |  |  |  |  |  |
| Group | -0.19 | [-2,1.61] | .83 | -.03 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .04 | .04 | .78 | .64 |
| Constant | -0.19 | [-1.54,1.15] |  |  |  |  |  |  |  |
| Group | -0.49 | [-2.38,1.41] | .61 | -.08 |  |  |  |  |  |
| NWR | -0.09 | [-0.26,0.08] | .29 | -.18 |  |  |  |  |  |
| TMT | -0.02 | [-0.07,0.04] | .58 | -.10 |  |  |  |  |  |
| LLAMA\_B | 0.11 | [-0.14,0.36] | .37 | .15 |  |  |  |  |  |

**Pretest-Posttest**

[Articulation Rate]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .07 | .07 | .07 | .07 |
| Constant | 17.45 | [8.26,26.64] |  |  |  |  |  |  |  |
| Group | -11.62 | [-24.37,1.13] | .07 | -.27 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .15 | .08 | .14 | .28 |
| Constant | 17.54 | [8.28,26.81] |  |  |  |  |  |  |  |
| Group | -11.79 | [-24.84,1.25] | .08 | -.27 |  |  |  |  |  |
| NWR | 0.20 | [-0.95,1.35] | .73 | .05 |  |  |  |  |  |
| TMT | 0.15 | [-0.24,0.53] | .44 | .12 |  |  |  |  |  |
| LLAMA\_B | 1.26 | [-0.44,2.96] | .14 | .23 |  |  |  |  |  |

[Mid-Clause Pause Duration]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .02 | .02 | .31 | .31 |
| Constant | -0.18 | [-0.27,-0.09] |  |  |  |  |  |  |  |
| Group | 0.06 | [-0.06,0.19] | .31 | .16 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .08 | .06 | .48 | .49 |
| Constant | -0.17 | [-0.26,-0.08] |  |  |  |  |  |  |  |
| Group | 0.05 | [-0.08,0.18] | .42 | .13 |  |  |  |  |  |
| NWR | 0.00 | [-0.02,0.01] | .49 | -.11 |  |  |  |  |  |
| TMT | 0.00 | [0,0] | .63 | .08 |  |  |  |  |  |
| LLAMA\_B | 0.01 | [-0.01,0.03] | .28 | .17 |  |  |  |  |  |

[Clause-Final Pause Duration]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .02 | .02 | .37 | .37 |
| Constant | -0.13 | [-0.26,0.01] |  |  |  |  |  |  |  |
| Group | 0.08 | [-0.1,0.27] | .37 | .14 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .04 | .02 | .80 | .84 |
| Constant | -0.13 | [-0.27,0.01] |  |  |  |  |  |  |  |
| Group | 0.10 | [-0.1,0.29] | .33 | .16 |  |  |  |  |  |
| NWR | 0.00 | [-0.02,0.02] | .99 | .00 |  |  |  |  |  |
| TMT | 0.00 | [0,0.01] | .61 | .09 |  |  |  |  |  |
| LLAMA\_B | -0.01 | [-0.04,0.01] | .40 | -.14 |  |  |  |  |  |
| Step 3 |  |  |  |  |  | .17 | .13 | .18 | .02 |
| Constant | -0.14 | [-0.27,-0.01] | .04 | .00 |  |  |  |  |  |
| Group | 0.08 | [-0.1,0.27] | .38 | .14 |  |  |  |  |  |
| NWR | 0.00 | [-0.02,0.01] | .62 | -.08 |  |  |  |  |  |
| TMT | 0.00 | [-0.01,0.01] | .91 | .02 |  |  |  |  |  |
| LLAMA\_B | -0.03 | [-0.07,0] | .03 | -.45 |  |  |  |  |  |
| Group x LLAMA\_B | 0.06 | [0.01,0.1] | .02 | .50 |  |  |  |  |  |

[Mid-Clause Pause Frequency]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .06 | .06 | .12 | .12 |
| Constant | 2.31 | [-0.09,4.71] |  |  |  |  |  |  |  |
| Group | -2.66 | [-5.99,0.68] | .12 | -.24 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .09 | .03 | .43 | .70 |
| Constant | 2.30 | [-0.19,4.8] |  |  |  |  |  |  |  |
| Group | -2.65 | [-6.16,0.87] | .14 | -.23 |  |  |  |  |  |
| NWR | -0.10 | [-0.41,0.21] | .52 | -.10 |  |  |  |  |  |
| TMT | 0.03 | [-0.08,0.13] | .60 | .08 |  |  |  |  |  |
| LLAMA\_B | -0.16 | [-0.62,0.3] | .48 | -.11 |  |  |  |  |  |

[Clause-Final Pause Frequency]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .01 | .01 | .49 | .49 |
| Constant | 1.57 | [0.29,2.85] |  |  |  |  |  |  |  |
| Group | -0.62 | [-2.39,1.15] | .49 | -.11 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .14 | .13 | .16 | .11 |
| Constant | 1.60 | [0.35,2.86] |  |  |  |  |  |  |  |
| Group | -0.67 | [-2.44,1.09] | .45 | -.11 |  |  |  |  |  |
| NWR | 0.08 | [-0.07,0.24] | .28 | .17 |  |  |  |  |  |
| TMT | -0.01 | [-0.07,0.04] | .61 | -.08 |  |  |  |  |  |
| LLAMA\_B | 0.23 | [0,0.46] | .048 | .31 |  |  |  |  |  |

[Repetitions]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .01 | .01 | .62 | .62 |
| Constant | -0.16 | [-0.93,0.61] |  |  |  |  |  |  |  |
| Group | -0.26 | [-1.33,0.8] | .62 | -.08 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .05 | .04 | .72 | .60 |
| Constant | -0.13 | [-0.93,0.66] |  |  |  |  |  |  |  |
| Group | -0.32 | [-1.43,0.8] | .57 | -.09 |  |  |  |  |  |
| NWR | 0.02 | [-0.08,0.12] | .70 | .06 |  |  |  |  |  |
| TMT | -0.01 | [-0.04,0.03] | .65 | -.08 |  |  |  |  |  |
| LLAMA\_B | 0.09 | [-0.06,0.23] | .24 | .19 |  |  |  |  |  |

[Repairs]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Coefficients | | | |  | Model | | | |
| Variable | *B* | 95% CI for *B* | *p* for *B* | β |  | R2 | ∆R2 | *p* for *R2* | *p* for ∆*R2* |
| Step 1 |  |  |  |  |  | .01 | .01 | .62 | .62 |
| Constant | 0.11 | [-0.56,0.78] |  |  |  |  |  |  |  |
| Group | 0.23 | [-0.7,1.16] | .62 | .08 |  |  |  |  |  |
| Step 2 |  |  |  |  |  | .19 | .18 | .07 | .04 |
| Constant | -0.06 | [-0.7,0.58] |  |  |  |  |  |  |  |
| Group | 0.56 | [-0.34,1.46] | .21 | .18 |  |  |  |  |  |
| NWR | 0.09 | [0.01,0.17] | .02 | .36 |  |  |  |  |  |
| TMT | 0.03 | [0,0.05] | .047 | .31 |  |  |  |  |  |
| LLAMA\_B | -0.11 | [-0.23,0.01] | .06 | -.28 |  |  |  |  |  |

Appendix S5. Intercorrelations for aptitude scores and fluency changes by group.

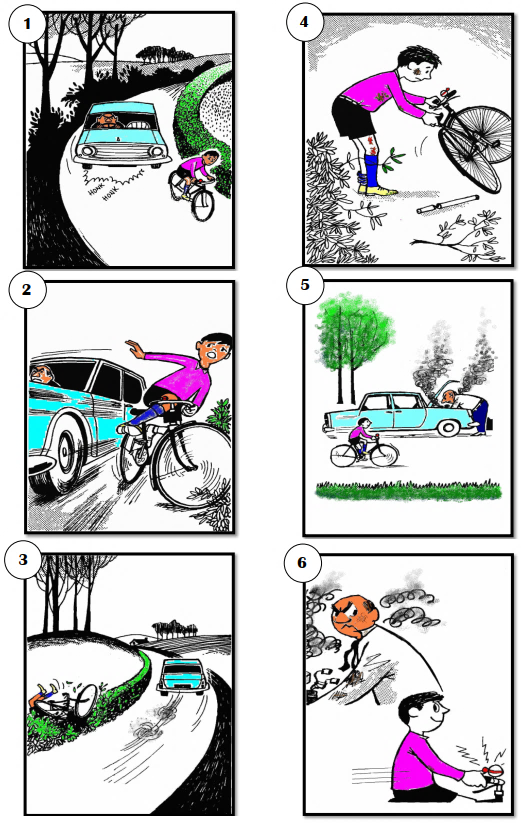
|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Blocked Condition | | |  | Interleaved Condition | | |
|  | NWRT | TMT | LLAMA\_B |  | NWRT | TMT | LLAMA\_B |
| *Day 1* |  |  |  |  |  |  |  |
| Articulation rate | .38 | -.09 | -.14 |  | .01 | .23 | .18 |
| Mid-clause pause duration | -.51\* | -.08 | .25 |  | -.02 | -.13 | -.22 |
| Clause-final pause duration | .34 | -.12 | .06 |  | .33 | -.09 | .06 |
| Mid-clause pause frequency | .06 | .18 | .17 |  | -.03 | .19 | .16 |
| Clause-final pause Frequency | .10 | -.03 | -.41 |  | -.01 | -.46\* | -.25 |
| Repetitions | .02 | -.17 | .07 |  | .07 | -.05 | .17 |
| Repairs | .00 | .41 | -.25 |  | -.06 | .14 | .25 |
| *Day 2* |  |  |  |  |  |  |  |
| Articulation rate | .21 | .21 | .19 |  | .04 | .29 | .03 |
| Mid-clause pause duration | .14 | -.02 | -.04 |  | -.41 | -.17 | -.10 |
| Clause-final pause duration | -.19 | .02 | -.15 |  | .07 | -.09 | .17 |
| Mid-clause pause frequency | -.46\* | .41 | .47\* |  | .13 | -.04 | -.18 |
| Clause-final pause Frequency | .42\* | -.26 | -.41 |  | .15 | -.17 | -.10 |
| Repetitions | -.19 | -.11 | .00 |  | -.13 | -.10 | .12 |
| Repairs | .15 | .06 | -.02 |  | -.16 | .42\* | .05 |
| *Day 3* |  |  |  |  |  |  |  |
| Articulation rate | .35 | .05 | .21 |  | -.30 | .29 | .24 |
| Mid-clause pause duration | .21 | -.02 | -.38 |  | -.16 | -.22 | -.31 |
| Clause-final pause duration | -.01 | .13 | -.36 |  | .18 | -.40 | -.04 |
| Mid-clause pause frequency | -.63\*\* | .33 | -.15 |  | .04 | .09 | -.19 |
| Clause-final pause Frequency | .20 | -.04 | .34 |  | -.01 | .21 | .32 |
| Repetitions | -.15 | .23 | .25 |  | .36 | -.33 | -.08 |
| Repairs | -.14 | -.09 | .08 |  | -.15 | .07 | .14 |
| *Pretest-posttest* |  |  |  |  |  |  |  |
| Articulation rate | -.05 | .02 | .17 |  | .14 | .28 | .36 |
| Mid-clause pause duration | -.02 | .21 | .36 |  | -.21 | .08 | -.02 |
| Clause-final pause duration | .00 | .08 | -.44\* |  | -.06 | .02 | .30 |
| Mid-clause pause frequency | -.32 | .10 | -.21 |  | .08 | .07 | .01 |
| Clause-final pause frequency | .23 | -.08 | .49\* |  | .20 | .01 | .09 |
| Repetitions | -.01 | .09 | .19 |  | .24 | -.17 | .17 |
| Repairs | .14 | .35 | -.19 |  | .37 | -.01 | -.15 |

*Note*. \* *p* < .05, \*\* *p* < .01

**Supplementary Information for External Review Only (These tests will be made available in IRIS digital depository [**<https://www.iris-database.org/iris/app/home/index>**])**

Training Pictures

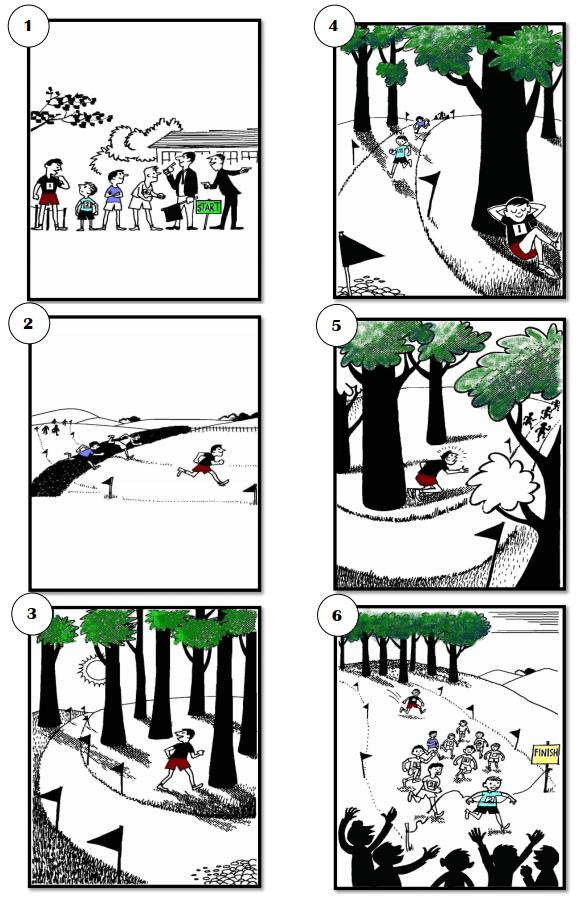
Bicycle



Tiger

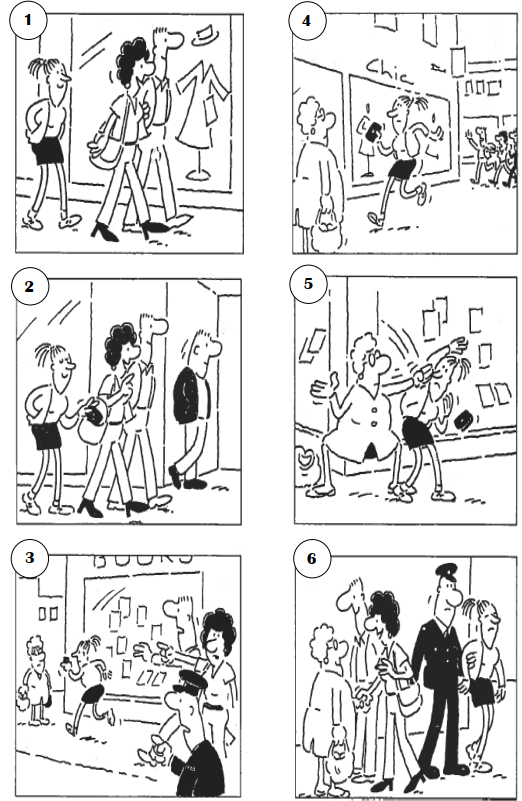


Race



Pretest and Posttest Pictures

Street



Airport

