

Deviations from pre-registration

1. Title was changed from “Differential influences of visuospatial and phonological resources on mental arithmetic” to “No clear support for differential influences of visuospatial and phonological resources on mental arithmetic? A registered report” to clarify that the manuscript is a registered report and to reflect our findings.
2. We recruited a total of 100 participants as specified, but 3 participants were not included in the final analysis sample due to not completing tasks in the second session.
3. Analyses remained the same, but data were analyzed in JASP rather than RStudio. RStudio was used to organize and format data. Rmarkdown file included will produce data sets used for analyses. Original dataset will be included with rest of files.
4. In the original analysis plan, we specified 4 subsample analyses (i.e. Chinese-educated, easy load, hard load, and first under cognitive load) as robustness checks. The language of the section implied the Chinese-educated subsample analyses would be included in our tests of Hypotheses 1a-1d. To improve clarity of those analyses and in reading, we moved the analyses of the Chinese-educated subsample to our testing of Hypotheses 2a-2d where we performed the pre-registered $2 \times 2 \times 2$ ANOVA that compared country of primary math education. pg. 17
5. In addition to the preregistered Bayesian repeated measures ANOVA, we included Bayesian pairwise t-tests across our analyses for Hypotheses 1a, 1b, 2a, & 2b.
6. Original text in table 1 columns 5 and 6 reflected difference between multiplication and subtraction performance when under verbal (column 5) and visuospatial load (column 6), respectively. This was changed to now reflect difference in multiplication reaction time when under verbal vs visuospatial load (column 5) and difference in subtraction reaction time when under verbal vs visuospatial load (column 6) to be more in-line with our preregistered hypotheses, planned analyses, and literature review. The key interaction coefficient and wording of the hypotheses are unchanged.
7. We added an additional column to Table 1, which reports the reaction times reported in previous literature. We use this as a check for abnormalities in reaction times between our results and the prior studies.
8. The manuscript now includes a descriptive table which comes before our planned ANOVA table.
9. The original planned ANOVA table (Table 2) has been split into two tables: one for reaction time and the other for accuracy.
10. Only the full sample and Chinese subsample results in tables are included in the main manuscript. The other subsample analyses and their respective tables are now included as part of the Appendix.
11. The manuscript now includes additional tables reporting the difference between load and no load conditions for Hypotheses 1c, 1d, 2c, & 2d.
12. The manuscript now includes tables reporting Bayes factors for all models under consideration in each analysis.
13. The manuscript now includes two additional figures examining differences in reaction time and accuracy across load conditions.