Executive Functioning

- Set of skills that let people plan, organize, and complete tasks
- An important aspect of executive functioning is working memory
  - The capability to briefly store and manipulate information in the performance of complex cognitive tasks such as reasoning, comprehension, and certain types of learning
- Analytic tasks require both executive functioning and working memory
- Most commonly identified and evaluated by a battery of pencil/paper tests

Discussion

Research Purpose: To pursue the development of a coding typology of executive functioning that can be applied to written tasks.

Research Question: Working inductively from the data, what constructs comprise factors of executive functioning?

Method

Demographics
- 128 student and staff participants
- Organized in groups of 2 and 3

Experimental Steps
- Practice web search
- Web task and report writing
- Discussion with colleagues
- Additional search and completion of report

Statistical procedure
- Exploratory principal components analysis as the intended factor structure was unclear
- Kaiser-Meyer-Olkin verified the sampling as moderate
- Bartlett’s test of sphericity indicated that correlations were sufficient for PCA
- Using PCA with varimax rotation, 3-factor and 4-factor solutions were computed and analyzed for interpretation
- 3-factor solution was interpretable (i.e., Eigenvalues were above 1.0; items loaded above .5; if items were cross loaded primary factor loadings > secondary ones by at least .20

Results

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>Inhibition Factor</th>
<th>Mental Shift Factor</th>
<th>Updating Factor</th>
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<tr>
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<td>1.02</td>
<td>.621</td>
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Three factor solution explained 67% of variance